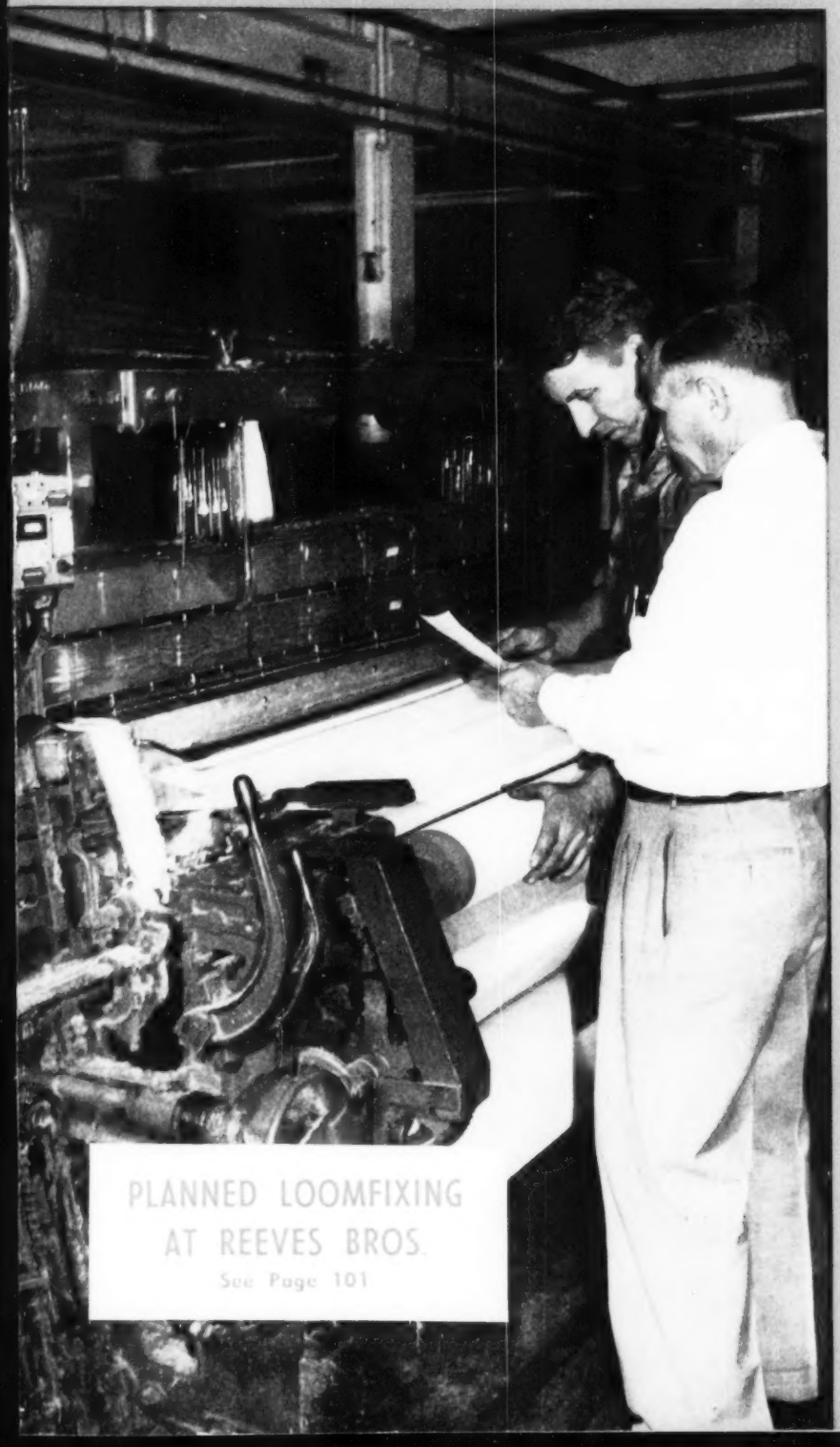
TEXTILE WORLD

A McGraw-Hill Publication ---------- **MAY • 1953**



PLANNED LOOMFIXING AT REEVES BROS.
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Subscriptions: Address correspondence to TEXTILE WORLD—Subscription Service, 99-129 North Broadway, Albany 1, N. Y., or 330 West 42nd Street, New York 36, N. Y. Allow ten days for change of address.
Subscriptions are solicited only from executives, engineers and technicians in textile manufacturing or finishing plants. Position and company connection must be indicated on subscription orders.
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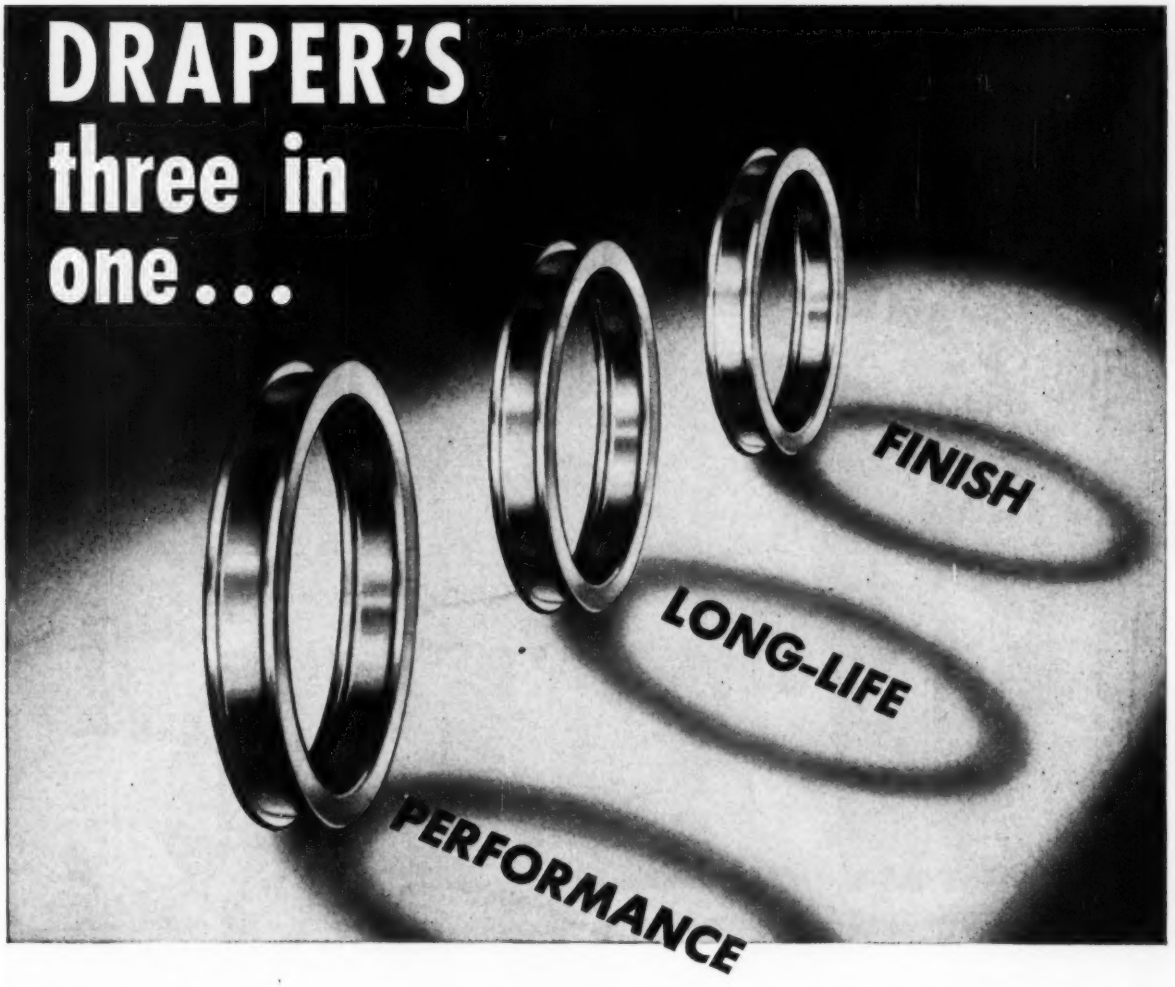

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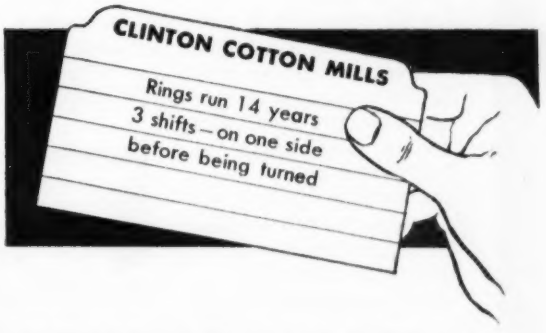

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THE Long-Range VIEW

The Pace Is Fast

Two indicators that the textile industry in the United States is a healthy, going industry just came in.

First, the British Cotton Board in its quarterly review showed that the United States was the world's leading exporter of cotton piece goods in 1952. In 1951, Japan was first, Great Britain was second, and the U. S. third. Exports of all countries dropped off 16% from 1951; but the United States dropped only 5%, while Japan dropped 30% and Great Britain almost 18%.

We do not pretend to know the ins and outs of the export picture, but these figures seem to indicate that the U.S. is more than holding its own in competition with lower-labor-cost countries.

The second indicator of the vitality of the U.S. textile industry is contained in the new (the sixth) annual McGraw-Hill survey, "Business' Plans for New Plants and Equipment," just released. Some of the results obtained in this study (based on unit volume, not dollars) are:

1. Textile mills expect an 8% average increase in sales in the next three years.

2. Mills expect to keep spending money for expansion and improvement at a fast, sustained rate.

We could stop right here and leave everybody feeling nice and comfortable. But it is more to the point to dig deeper to get a more complete picture and see what will be necessary to be near the top of the heap in the next few years. Some pertinent facts you should know and keep constantly in mind are:

1. The textile mills that expect 8% more textile goods to be sold in the next three years expect their own sales to increase 12%.

Here, indeed, is food for thought. These companies quite frankly expect to take 4% of present textile business away from less-alert, less-aggressive, more-backward mills. There are three ways it can be done: (a) lower-cost products, (b) new products to displace present standard products, and (c) better merchandising and selling.

You can get some indication of how you can stand up under this three-way barrage by comparing your past activity with over-all industry activity in these lines. Last year mills spent over $500-million on expansion and improvement and $30-million on research to lower costs and create new products. No mill stood still; it either moved ahead with the industry or slipped back deeper in the backwash.

2. More and more of the money spent by mills will go for improvements rather than expansion. The figures are:

	(%)
1952	70
1953	83
1954–5	89

These figures mean only one thing: The mills that stay on top of the heap will be those that look for, and find, places for improvement.

3. Money will continue to pour out for improvements. Expenditures last year were third only to all-time-high 1951 and runner-up 1950. The McGraw-Hill survey shows that mill expenditures planned for this year are down only 1% from last year's actual. Expenditures already planned for 1954 are down only 8% from 1952's actual.

Here is another yardstick you can use to gauge how you stand. If you have made no significant improvements in the last year or two and have none planned for the next couple of years, you can be certain that you are falling behind the industry.

4. Mills that plan to continue improving at about the 1952 rate reported that to take full advantage of technical improvements, they should spend 26% more money than in 1952 and 1953. (See TW, March '53, p. 4, for a discussion of this point.)

Well, there is the picture. In general, what it amounts to is that the textile industry is strong and full of energy. With less expansion possibilities than some other industries, it is turning more and more to the other avenue of industrial growth: improving present capacity. Admittedly, this avenue is tougher than riding the crest of expansion growth—where anybody can be a success; but it offers a stimulating challenge. It is the avenue where the boys are separated from the men; where marginal operators go down; where men with brains, vision, and willingness to work reap the rewards.

J. M. Thomas

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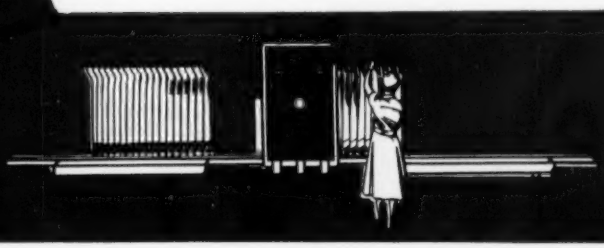

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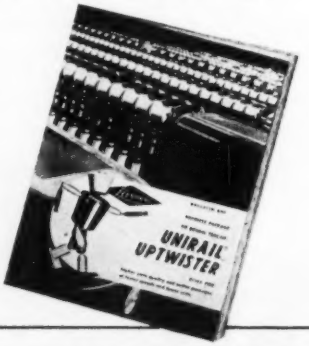

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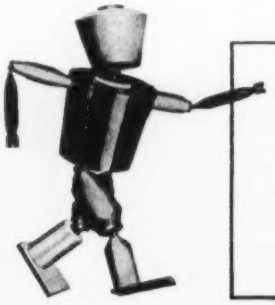

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Behind the scenes at

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The Monarch Mill, Ajax, Ontario. The air supply duct in background delivers washed, cooled and humidified air.

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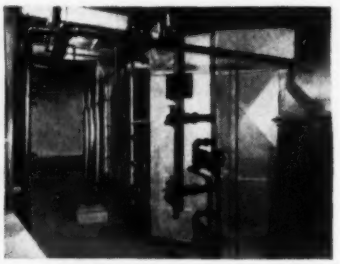
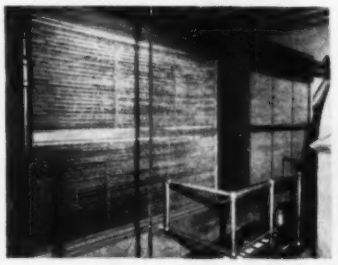
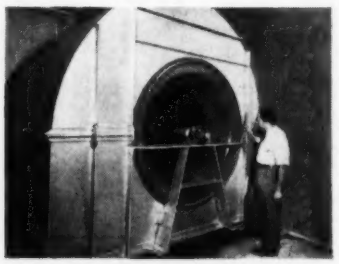
1. Plenum chamber, showing fresh air dampers at left, recirculating dampers at bottom, and lint screen at right.



2. Apparatus room for south system, with air washer and heater coils.



3. Heater coils and by-pass dampers located in the north system of mill.



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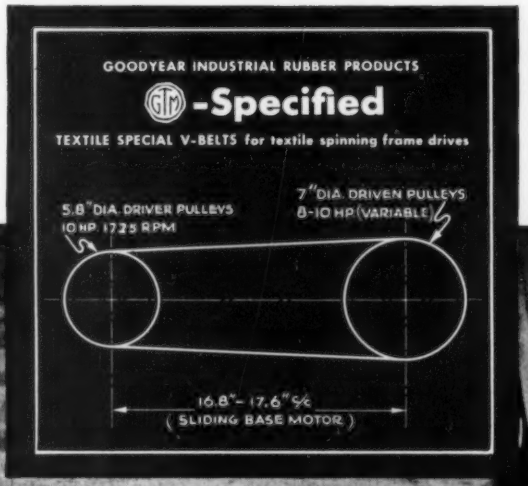

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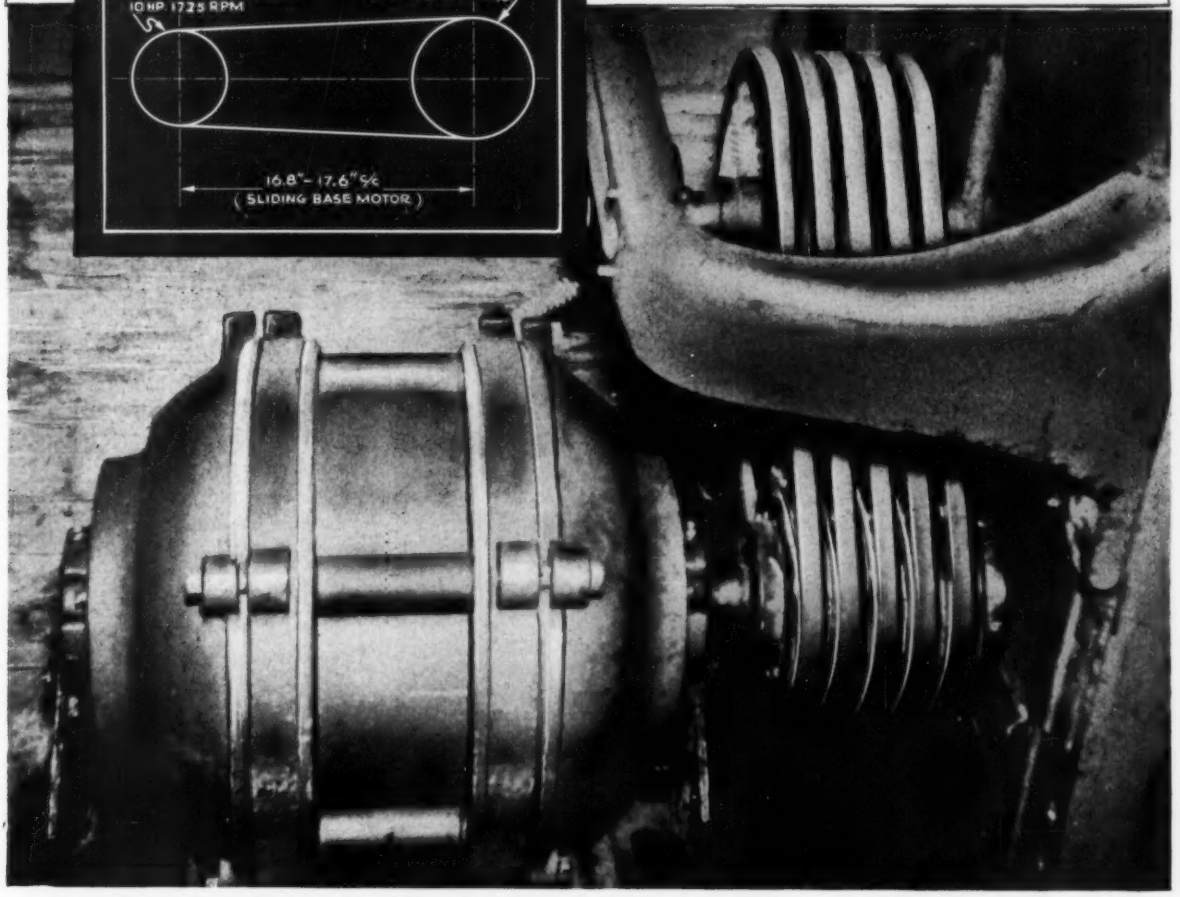
The G.T.M.—Goodyear Technical Man—specified Textile Special V-Belts. Thanks to design-for-the-job, they have served so far over three years—*triple service to date.* Goodyear, Mechanical Goods Division, Akron 16, Ohio.



YOUR GOODYEAR DISTRIBUTOR can quickly supply you with Hose, Flat Belts, V-Belts, Packing, Tank Lining, Rubber-Covered Rolls. Look for him in the yellow pages of your Telephone Directory under "Rubber Products" or "Rubber Goods."

GOODYEAR

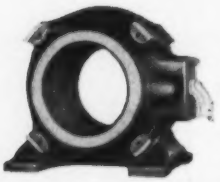
THE GREATEST NAME IN RUBBER

We think you'll like "THE GREATEST STORY EVER TOLD"—every Sunday—ABC Radio Network—THE GOODYEAR TELEVISION PLAYHOUSE—every other Sunday—NBC TV Network

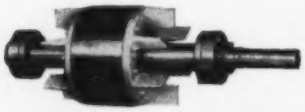
Century Textile motors are ruggedly built for long service life.

Century TEXTILE MOTORS SHED LINT

Are Well Ventilated for Long Service Life



Strong, rigid cast iron frame, smooth contours permit free circulation of air.



Rotor assembly with ball bearings in place. Large fans assure adequate ventilation.

Rigid cast iron end brackets maintain alignment, provide smooth, quiet starting and running.

Smooth, clean air passages permit cooling air to enter the motor through the end brackets. This steady blast of air circulates over the bearings, around the windings and out through the large air passages in the frame.

These Century motors are non-clogging — lint and textile dust pass through the motor readily. The motors stay clean, operate at normal temperatures!

In addition to textile motors, Century builds a complete line of electric motors in sizes from ⅛ to 400 horsepower . . . in drip proof, splash proof, enclosed fan cooled and explosion proof frames. Century selective speed drives are also available.

Specify Century for all your textile and standard motor requirements.

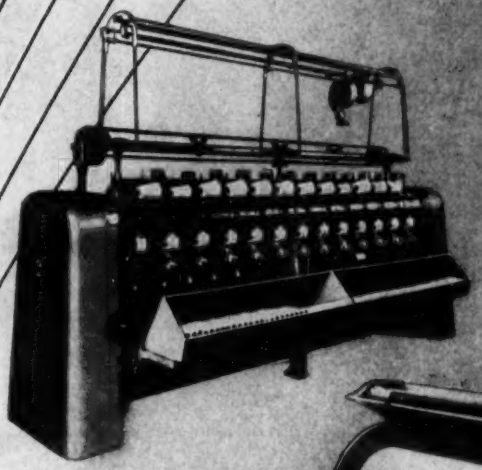
Century C MOTORS

CENTURY ELECTRIC CO., 1806 Pine St., St. Louis 3, Mo. • *Offices and Stock Points in Principal Cities*

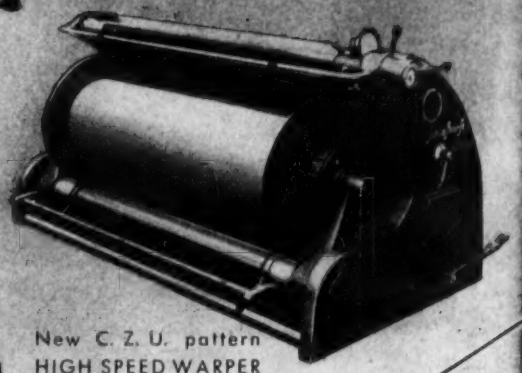
For more information, write direct or use Reader Service post card.

MODERN MACHINERY FOR WINDING AND WARPING

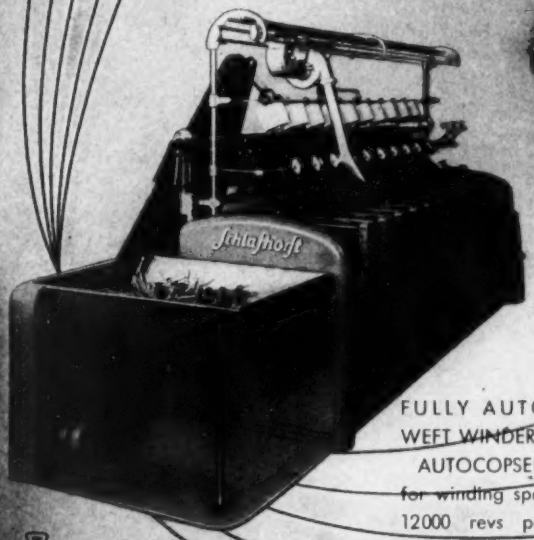
Schlafhorst



NEW GROOVED CYLINDER
CONE AND CHEESE WINDER
B. K. N. PATTERN
SELF-THREADING
for winding speeds up to
1300 yards per minute



New C. Z. U. pattern
HIGH SPEED WARPER
Extraordinary production
Greatest simplicity



We also make CONE CREELS
of various types, such as f. i.
MAGAZINE CREELS
and TRUCK CREELS
with electric detectors of our
eyeboard system

FULLY AUTOMATIC
WEFT WINDER (QUILLER)
AUTOCOPSER A. S. F.
for winding speeds up to
12000 revs per minute

W. SCHLAFHORST & CO · M.GLADBACH · GERMANY

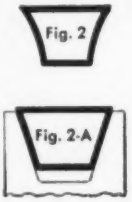
WHY
Gates V-Belts Wear Longer-

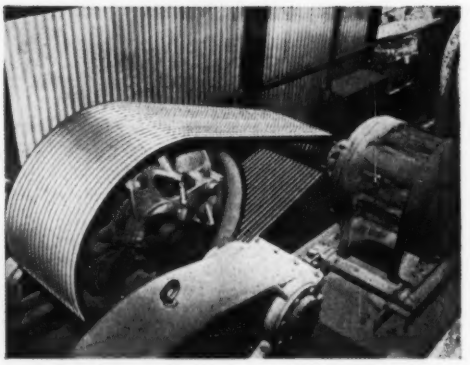
The CONCAVE SIDE (U.S. Patent No. 1813698) is what gives the Extra Wear!

Take any *straight-sided* V-Belt (Fig. 1) and bend it as it bends in going around its pulley. You will clearly see its sides *bulge out* (Fig. 1-A). These sides therefore press *unevenly* against the V-pulley and this causes extra wear at the point shown by arrows (Fig. 1-A).

Now bend a Gates Vulco Rope with CONCAVE SIDES (Fig. 2).

You will see the precisely engineered CONCAVE SIDES fill out to an exact fit in the sheave-groove (Fig. 2-A). The sides press *evenly* against the V-pulley. All wear is distributed *uniformly* across the *full width* of the Gates Vulco Rope—and this means longer belt *life* and *lower* belt *costs* for you.





Typical Gates Vulco Rope Drive—the Gates V-Belts are built with Concave Sides to insure longer belt wear.

When you buy V-Belts, be sure to get the V-Belt with the CONCAVE SIDES—the Gates Vulco Rope!

Gates Engineering Offices and Jobber Stocks are located in all industrial centers of the United States and in 71 foreign countries.

CS-533

V-Belts—Hose
Molded Rubber Goods
for industry
World's Largest Maker
of V-Belts

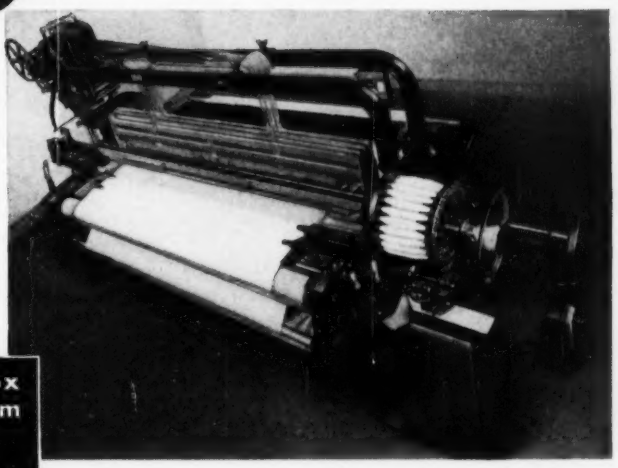
Gates® VULCO ROPE DRIVES

THE GATES RUBBER COMPANY • DENVER, U.S.A.

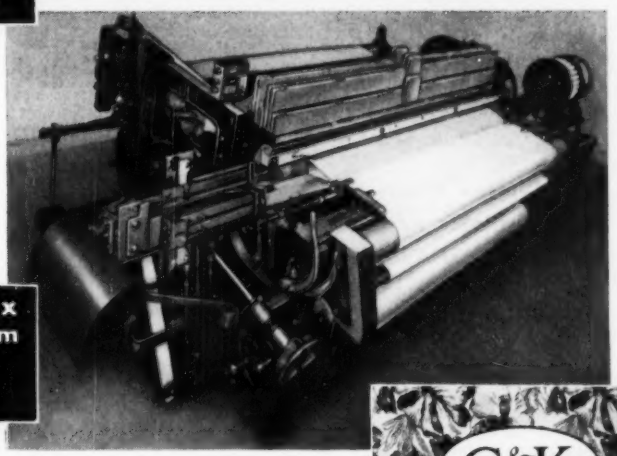
FIRST IN FILLING MIXING LOOMS

For many years, C&K has built multi-purpose Filling Mixing Looms with the Call Box feature. Now, out of this long experience, come these latest-design, *single-purpose* Filling Mixing Looms . . . to give you greatest return in saleable cloth per dollar of your loom investment.

But whether you need multi-purpose or single-purpose Filling Mixing Looms, the *first* thing to do is to set your sights by standards of *proven performance*. See C&K today!



New C&K 2x1 Box Filling Mixing Loom
equipped with
rotary magazine . . . and
HEAD MOTION



New C&K 2x1 Box Filling Mixing Loom
equipped with
rotary magazine . . . and
END CAM

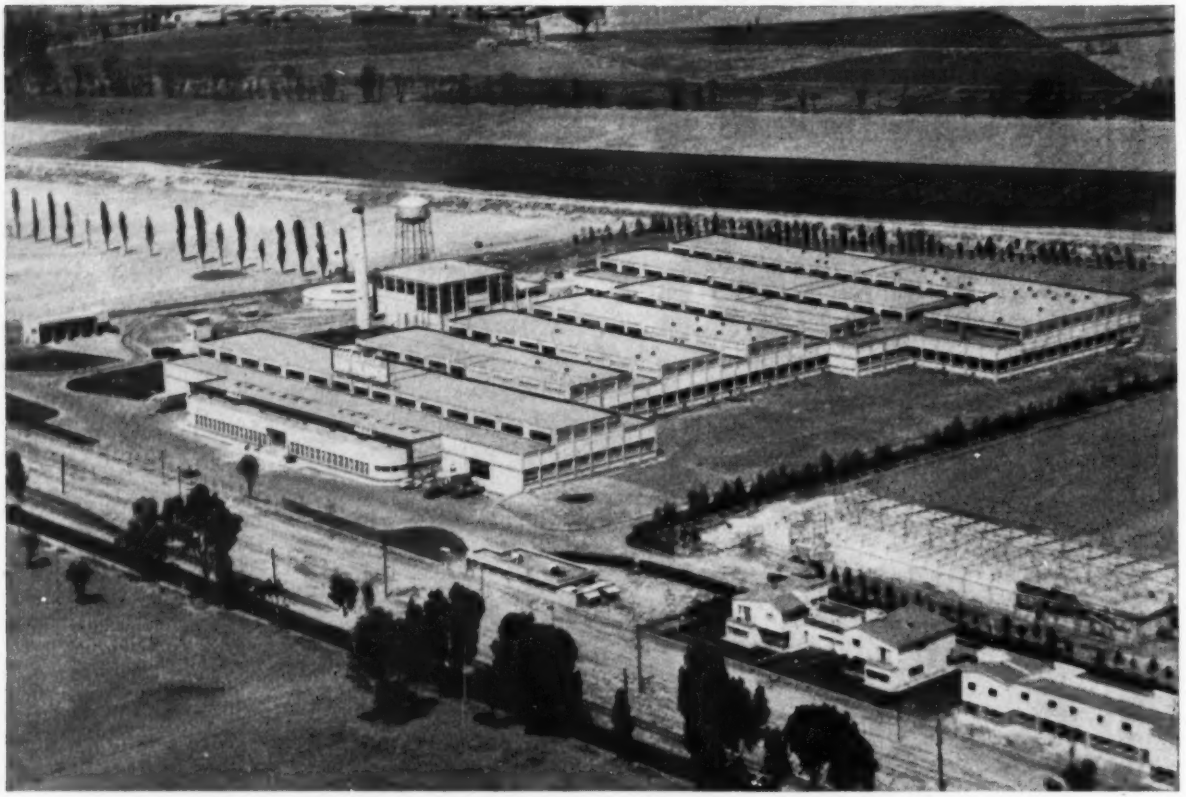
Crompton & Knowles LOOM WORKS

WORCESTER 1, MASSACHUSETTS, U. S. A.

Philadelphia, Pa. • Charlotte, N. C. • Allentown, Pa. • Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Woven Fabrics

A Lockwood Greene Project



Large new textile finishing plant near Mexico City for Acabados, Mexico, S. A.

A RECORD OF SERVICE IN FINISHING PLANTS as measured by:

New Plants	71
Major Additions	100
Minor Additions, Reports, Appraisals	347
Total Engagements	518
Cost New Plants and Major Additions	over $55,000,000

The Mexican plant shown above has complete facilities for bleaching, dyeing and finishing of cotton and rayon textiles. Lockwood Greene were consulting engineers on the entire project and made all machinery and equipment layouts.

LOCKWOOD GREENE

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with Minimum Foaming

You'll get peak efficiency when using NEKAL NS for wetting and rewetting all textiles. It works equally well in either cold or hot solutions and its high speed performance in low concentrations makes NEKAL NS very economical to use. We welcome your request for samples and application recommendations on NEKAL NS in your particular wetting or rewetting problem.

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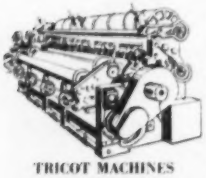
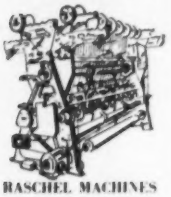
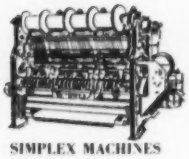


TRICOT MACHINES



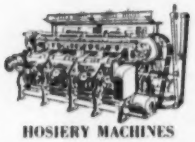
RASCHEL MACHINES



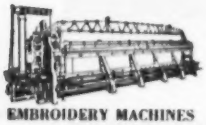
SIMPLEX MACHINES

WARPERS

CREELS



HOSIERY MACHINES

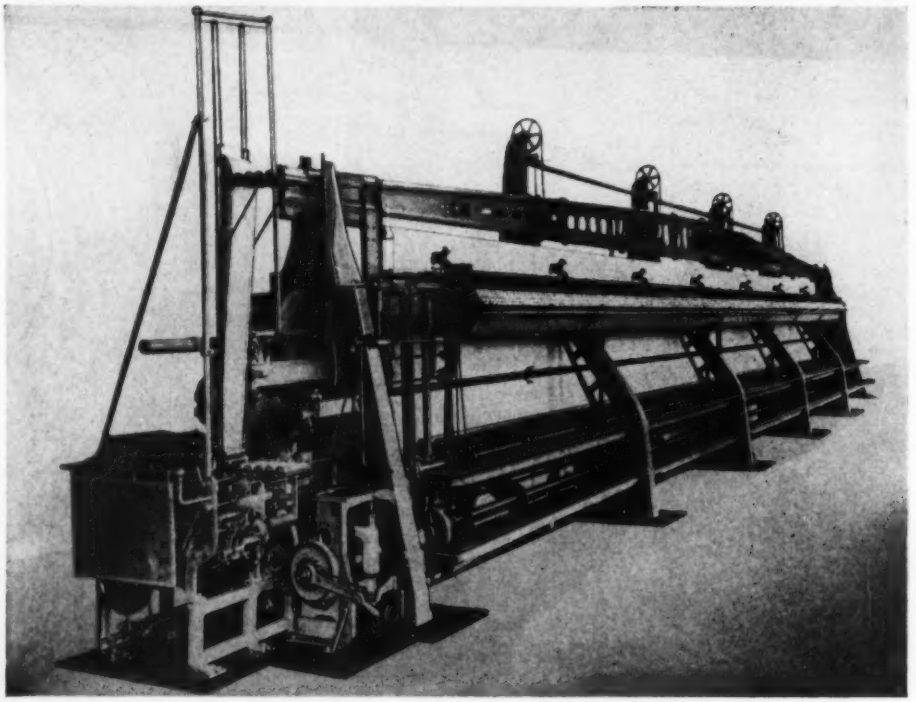


EMBROIDERY MACHINES

Ready spare part service available for all Reiner equipment.

New! Reiner

15 YARD AUTOMATIC SHUTTLE *Embroidery* MACHINE



WE ARE PROUD to offer to the embroidery and related industries an up-to-date, improved 15 Yard unit, progressively developed in close cooperation with embroidery machine users. Our background as pioneers in this field, our wealth of experience, and our close working contacts with hundreds of embroidery plants near and afar, are behind this first American-made 15 Yard Reiner Automatic Shuttle Embroidery Machine.

Fifty years ago our firm sold its first unit to the American embroidery trade. Ever since that time our relationship with this industry has been a close one. We are indeed happy that the completion of this machine coincides with our Golden Anniversary.

Those interested are welcome to make an appointment to inspect this latest Reiner machine in action.

FEATURES:

- Stitching width 72/4
- Full 24" span, complete with Automatic Attachment suitable for standard Vomag type punching cards.
- 4/4 Repeat.
- Automatic spanning.
- Large package of goods roller.
- Machine is liberally provided with ball bearings.
- All shafts provided with oilite bushings
- All cams are hardened.
- Steel bands are guarded.
- Extra heavy shuttle shaft.
- Separate upper and lower shuttle drives, permitting unobstructed access to cloth.
- Front and rear shipper rods over the entire length of the machine.
- Frame centrally actuated for smoother motion.
- Thread guide box cams for more positive action.
- V-belt drive.
- Separate base plate for advance preparation of foundation.

1903 50th Anniversary 1953

ROBERT REINER INCORPORATED

10 MINUTES FROM TIMES SQUARE

Take Bus Nos. 61 or 67, from Platform No. 60, Port Authority Bus Terminal, 41st Street and 8th Avenue, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-6882.

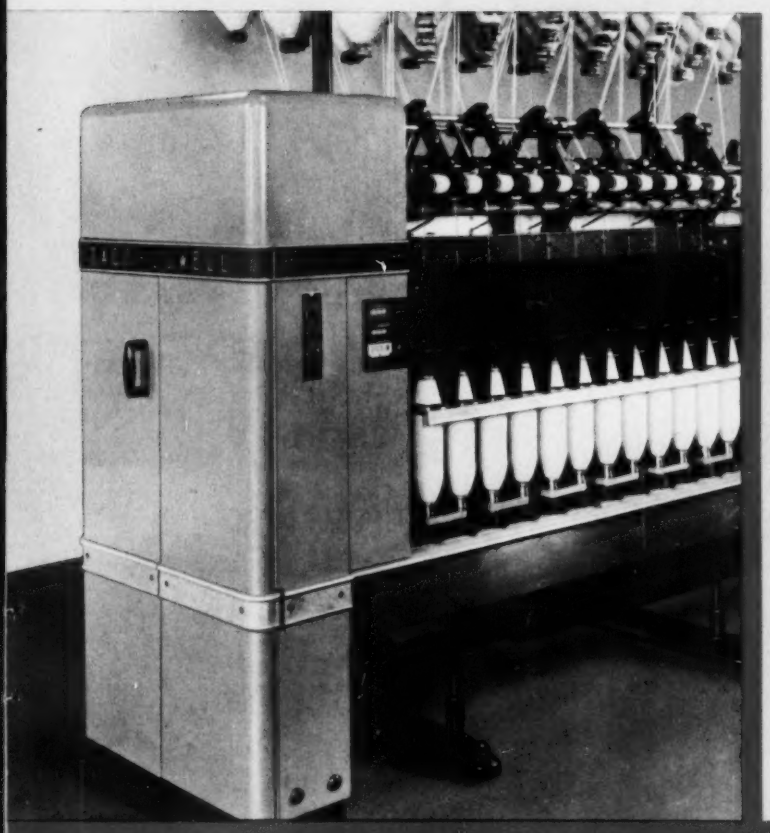
FOUNDED IN 1903 — 550-564 GREGORY AVENUE, WEEHAWKEN, NEW JERSEY

ALLIS-CHALMERS

TEXTILE DRIVES

New:

Air-Cooled Motor for Saco-Lowell SG-1 Spinning Frame



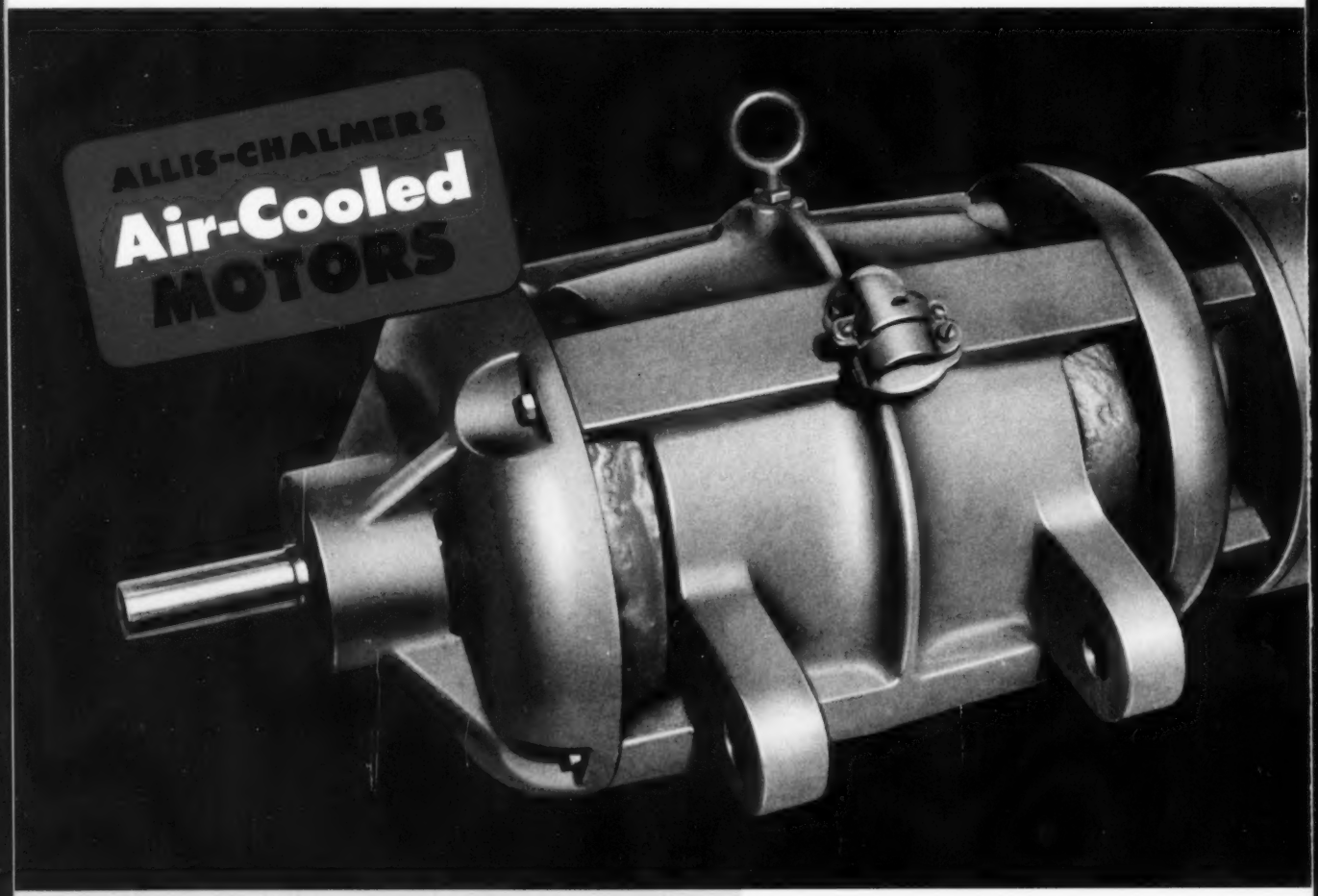
This motor is especially designed for use in textile mills. Allis-Chalmers offers the complete combination of motors, V-belt drives and control — undivided responsibility for everything from power line to driven shaft.

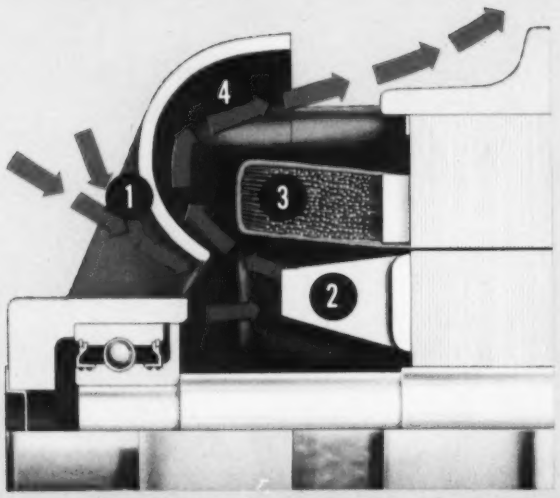
A-4022

ALLIS-CHALMERS

A-C ALLIS-CHALMERS

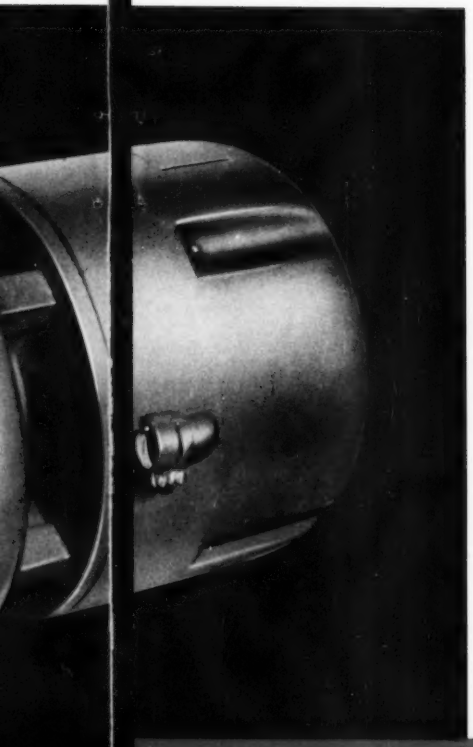
New Spinning
Licks Problems of





1. Large air inlets with rounded corners and smooth surface permit fast flow of air.
2. Big fans keep cooling air moving swiftly through the motor.
3. Protected stator coil ends completely eliminate lint catching pockets and projections.
4. Large air outlets are shaped to aid air flow and keep air velocity high.

Frame Motor Space and Cooling



In order to cut space and improve appearance when designing their SG-1 frame, Saco-Lowell decided to place the motor and drive underneath.

Allis-Chalmers was asked to solve the problem of fitting a 20-hp motor into small space and cooling it adequately in this confined area. Both water-cooled and air-cooled motors were developed. Where hard water, or water with high iron content, creates softening and filtering problems that are difficult and expensive to solve, the air-cooled motor may be preferable. The water-cooled motor is offered and does have the advantage of relieving some load on the mill's air conditioning system.

Modifications of the long-known *Quick-Clean* textile motor were made to suit these special conditions. This motor has already been widely used for spinning frame duty in the humid, lint-laden air of textile mills.

Here is essentially all that is changed: the diameter of the motor is cut; the length is increased; special mounting lugs replace the feet; and a 50-pound brake is added. Rating, per Saco-Lowell specifications, is 20 hp, 1800 rpm.

Get complete details on this and other motors and drives for textile mills. Call your nearby Allis-Chalmers Distributor or District Office. Or write Allis-Chalmers, Milwaukee 1, Wisconsin.

Quick-Clean is an Allis-Chalmers trademark.

ALLIS-CHALMERS

SEND THIS COUPON TODAY

Allis-Chalmers Manufacturing Company
Box 77
Milwaukee 1, Wisconsin

Please send me the literature for designers checked below.

MOTORS

- ☐ Handy Guide to Motor Selection 51B6052
- ☐ *Quick-Clean* Textile Motors 51B6055B

CONTROL

- ☐ Across-the-line Starters 14B7132
- ☐ Reduced-voltage Starters 14B7215

***TEXROPE* DRIVES**

- ☐ Wide Range Stationary Control Sheaves 20S7590
- ☐ *Vari-Pitch* Drive Engineering Data 20B7499

Name..... Title..... Company.....

Address..... City and State.....

ALLIS-CHALMERS
V-Belt
DRIVES

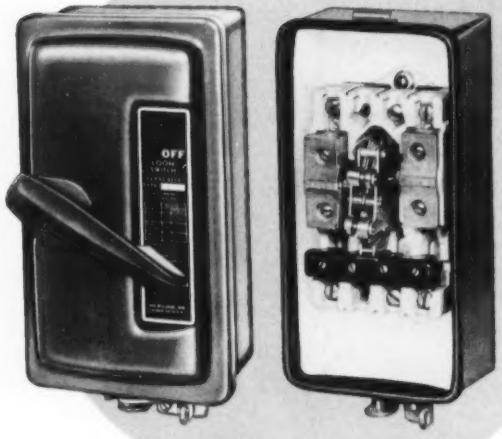
Save Time... Trouble!
Adjust From Motor Side

New design of the wide range *Vari-Pitch* sheave permits adjustment from the motor side instead of the frame side, where space is limited. Turning a single screw with a straight lever rod is all that's needed to change sheave diameter. In addition, *Magic-Grip* taper-bore bushing has single lock nut for fast mounting.

Whether you are building or modernizing, it will pay you to discuss your drive problems with an Allis-Chalmers Authorized Distributor or District Office. Or write Allis-Chalmers, Milwaukee 1, Wisconsin.

SPECIFICATIONS — For use with Q or R section belts on motors ranging from 1½ to 30 hp with motor speeds from 900 to 1800 rpm.

Texrope, Vari-Pitch and Magic-Grip are Allis-Chalmers trademarks.



ALLIS-CHALMERS
CONTROL

Get Specialized Control Engineered with the Drive

A LINE of full voltage and reduced voltage motor starters is available to meet the requirements of any type of textile motor drive.

Typical is this new loom motor manual starter. Its toggle action is preferable to push button operation for reasons of convenience when mounting starter in high or low positions.

Loom switches and slow speed starters for card drives, and roving frame drives are also available.

Solve your control problems along with your drive problems by calling an Allis-Chalmers Authorized Distributor or District Office. Or write Allis-Chalmers, Milwaukee 1, Wisconsin.

ALLIS-CHALMERS

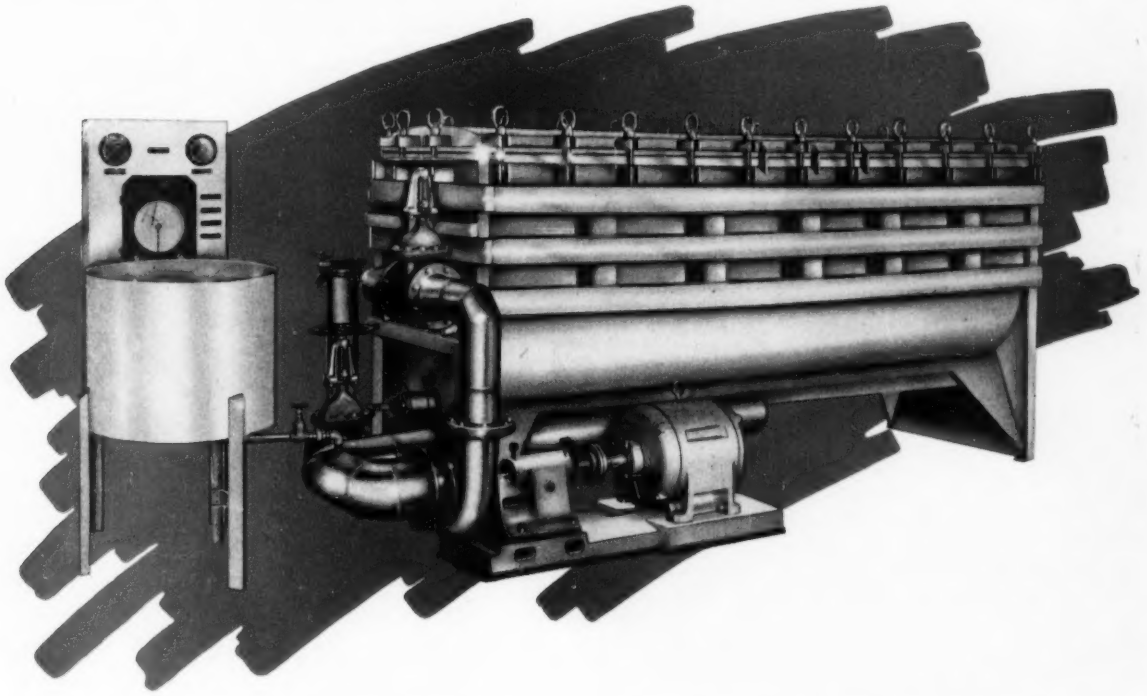
A-C ALLIS-CHALMERS

Milwaukee 1, Wisconsin

The Sure Answer to Your Finishing Problems!

BURLINGTON'S NEW PRESSURE DYE, BOIL-OFF AND BLEACH MACHINE

For Tricot, Marquisettes, Laces and all Open Weave Fabrics

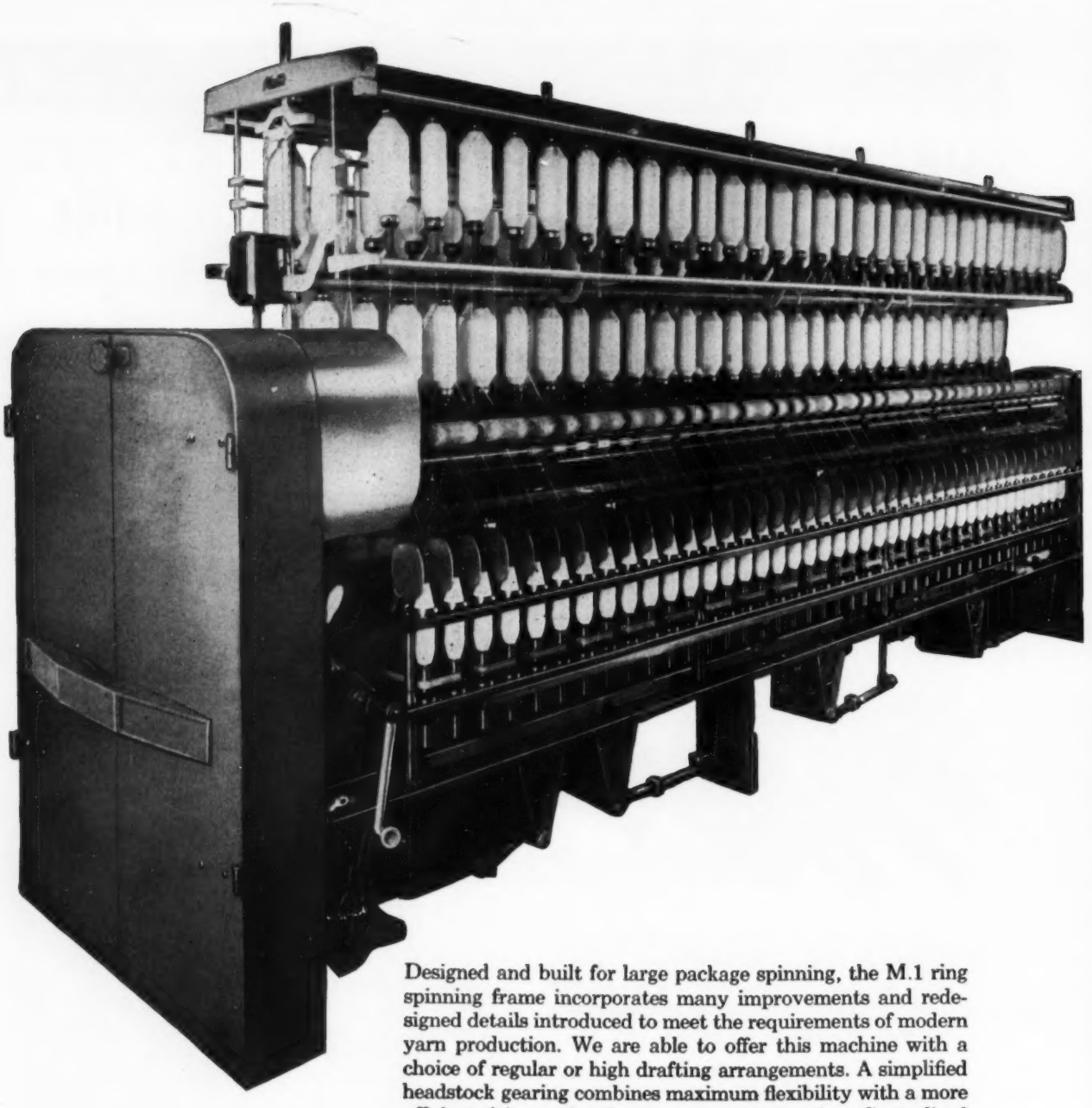


Here is a machine that will efficiently and thoroughly clean, boil, bleach and dye at a great reduction in costs. It will speed up your production to a rate heretofore unknown in the handling of open weave fabrics.

This new machine circulates solution through material at rates of 1,000 to 1,400 gals. per minute. It is also available with two-way flow. All temperatures and pressures remain under control at all times, giving full protection to cloth being processed. Although this is a new machine, it has been tried and tested and is now installed in many of the leading dye plants in the East, South and West. **Burlington Engineering Co., Inc., Graham, N. C. Telephone—6-4478, Burlington, N. C.**

Call or write for additional information

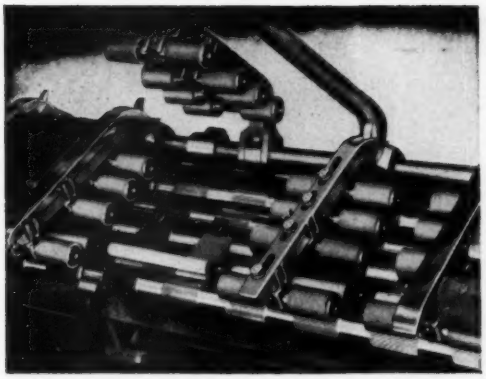
BURLINGTON ENGINEERING CO., INC., GRAHAM, N. C.



Designed and built for large package spinning, the M.1 ring spinning frame incorporates many improvements and redesigned details introduced to meet the requirements of modern yarn production. We are able to offer this machine with a choice of regular or high drafting arrangements. A simplified headstock gearing combines maximum flexibility with a more efficient drive and reduces power consumption. Centralized headstock lubrication allows the frame to be oiled while running. A combination building motion may be used which enables three types of build to be obtained on the same frame by means of simple adjustments. The Pneumafil system of broken end collection is normally fitted. May we send you full data.

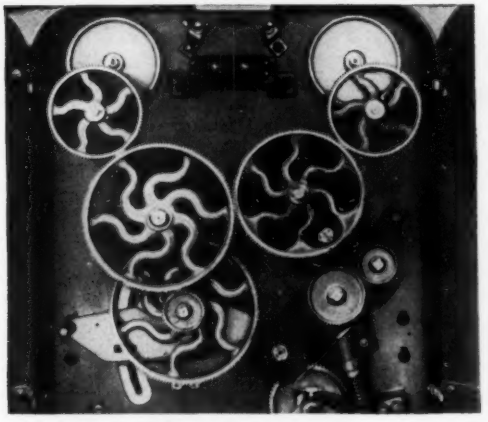
M1 LARGE PACKAGE RING SPINNING FRAME

PLATT BROS.
SALES LTD. OLDHAM, ENGLAND



NEW! SPRING ARM ROLLER WEIGHTING

Weight hooks and stirrups are gone. New spring arm adjusts to a wider range of staple lengths without altering the nip pressure. Resilience and pressure remain correct even after regrinding cots. Instant pressure release saves cots over week-ends. Central roller support arm raises for quick cleaning of ALL rollers. Few oilings are needed and none near the cots. (Pat Pend.)

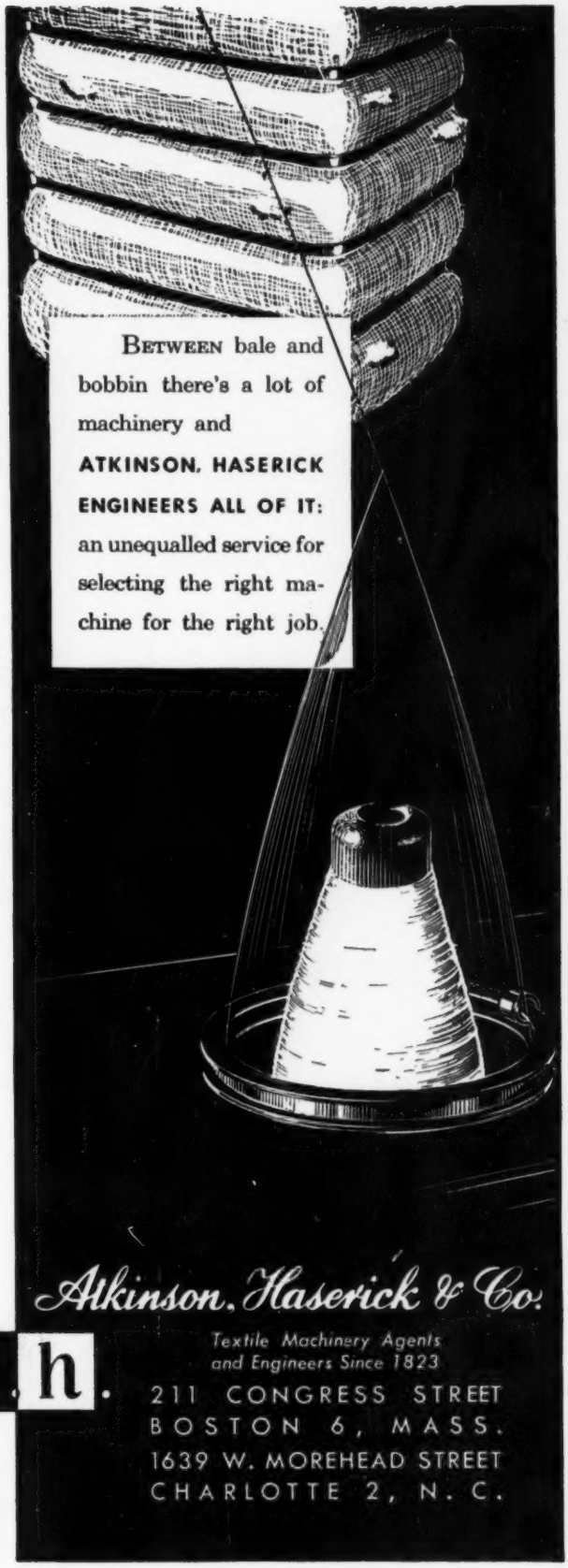


SIMPLIFIED HEADSTOCK

Headstock gearing has a central lubrication system allowing frame to be oiled while running and avoids excess or under lubrication. Simplified gearing combines flexibility of turns per inch while using fewer gears. Greater efficiency is attained and less power consumed.

HIGH SPEED SPINDLE

Cut-away, shows the heavy load, roller bearing spindle for large packages with long lifts. It is of the oil cushion ring brake insert design. They need routine maintenance at only 2,500 hour intervals. Power savings run up to 15% on this type of spindle.



BETWEEN bale and bobbin there's a lot of machinery and **ATKINSON, HASERICK ENGINEERS ALL OF IT:** an unequalled service for selecting the right machine for the right job.

Atkinson, Haserick & Co.

Textile Machinery Agents and Engineers Since 1823

a. h.

211 CONGRESS STREET
BOSTON 6, MASS.
1639 W. MOREHEAD STREET
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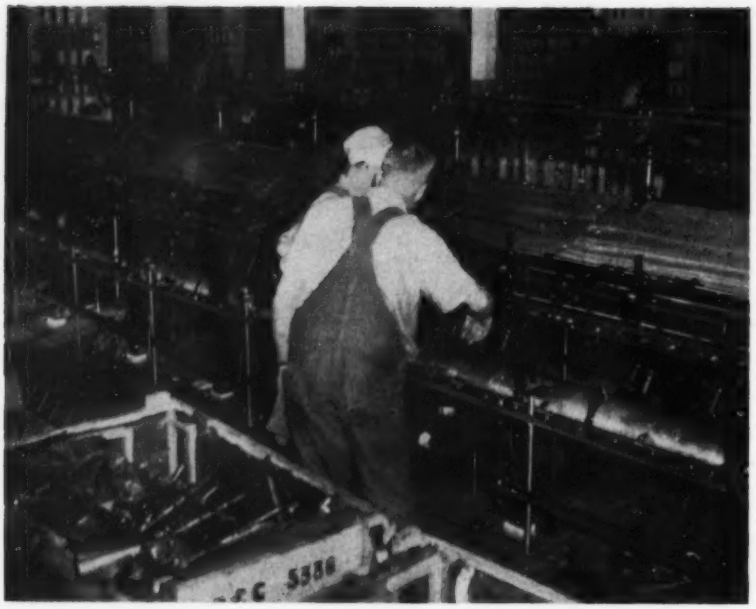


ERECTING NEW TYPE WOOLEN TWISTER

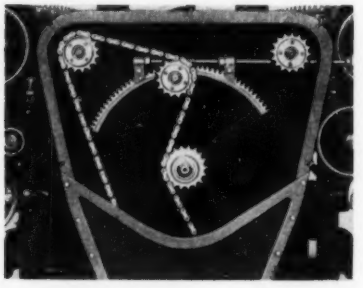
From packing cases to production . . . in nine days

This new Prince-Smith & Stells Axminster Woolen Twister was scheduled for erection by Atkinson, Haserick & Co. on February 9th. That was the day we started taking these photos.

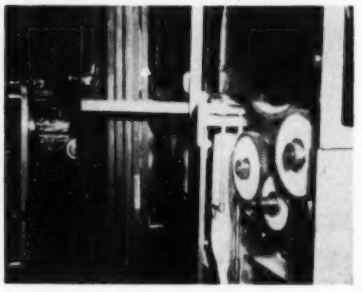
Everything was there; parts checked by the factory, motors from Schenectady, belts from Pittsburgh, bobbins from Burlington and the factory erector who worked on the job from 7 till 7. The frame was producing yarn on the ninth day, the sixth Prince-Smith & Stells machine in this mill.

In the U. S., Prince-Smith & Stells teams up with Atkinson, Haserick & Co. to give you excellent machinery and competent engineering service. Please call on us.

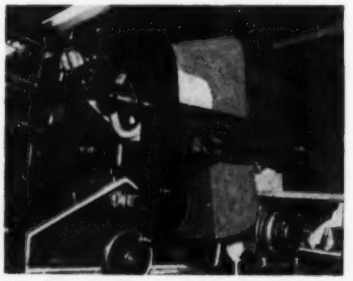
1. While the factory erector, Atkinson, Haserick engineers and mill crew were working, we took these photos of new features as they were being installed.



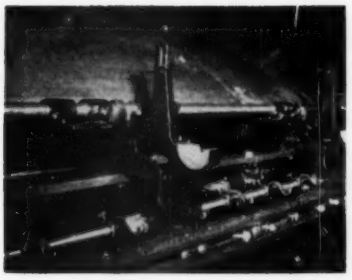
5. Reversing change speed device allows quick reversing of twist without changing tapes. Sprocket drive gives definite ratio which can be duplicated.



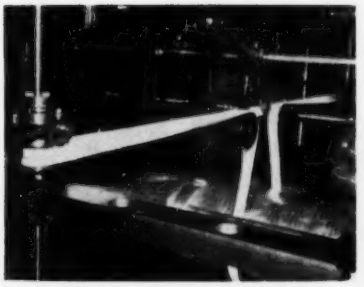
9. Long belts from overhead motor take up little space. Hinged door exposes all twist gearing, a great convenience when making changes.



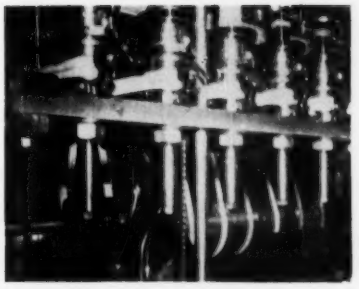
13. Operators on either side drop empty bobbins in the conveyor that runs the entire length of the frame. The bobbins are deposited in a truck at the motion end.



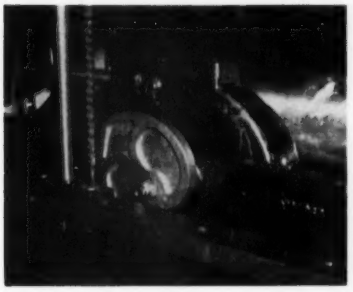
2. Simplified one-piece stand supports front roll, eccentric shaft and finger rod. The Oilite bushing now eliminates oiling in the yarn area.



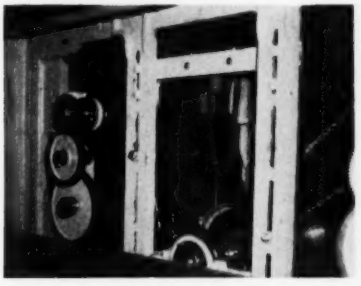
3. New double tension pulleys do away with angle settings. Tapes and pulleys are not touched when reversing twist. Pulleys run on Hoffman ball bearings.



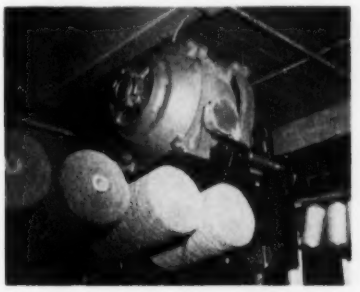
4. One tape drives two spindles with 180° contact on wharles assuring a more positive spindle speed. A noticeable reduction in power consumption is achieved.



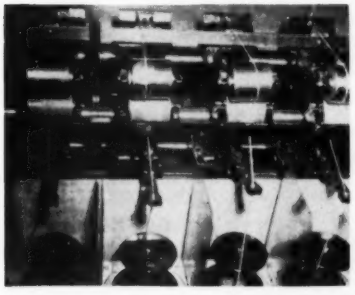
6. The lifter motion gearing is not altered when reversing twist. The new horizontal motion has Hoffman thrust bearings and is totally enclosed.



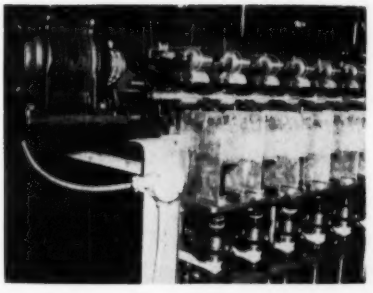
7. Each side has a separate lifter motion chain driven, fitted with shear pins. The clutch operated eccentric motion is also chain driven.



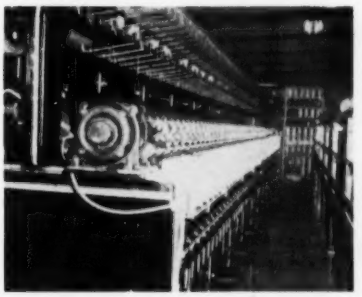
8. Motor is mounted on an overhead spring cradle to save floor space and allow a longer center drive for belts. Peg creel holds large diameter cheeses.



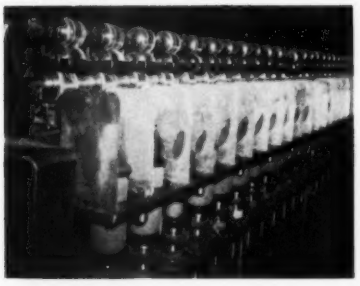
10. Trap motion instantly stops twin clutch spindle and top rollers when end breaks or runs out in creel, enabling single knots to be tied behind the rollers.



11. New type roller swingers are flame hardened at points of contact to resist wear. Middle rolls may be Accotex covered for a cushioned, more positive nip.



12. Here is the frame on the 9th day of erection. The operator liked its smooth operation and convenience. Maintenance men will not oil the spindles for 2,500 hours.



14. This is one of the many other Prince-Smith & Stells twisters running without mechanical interruption for years in this mill.

P-S&S

PRINCE-SMITH & STELLS
LIMITED
INCORPORATING TAYLOR WORDSWORTH & CO. LTD.
KEIGHLEY — ENGLAND

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Atkinson, Haserick & Co.
TEXTILE MACHINERY AGENTS & ENGINEERS SINCE 1823
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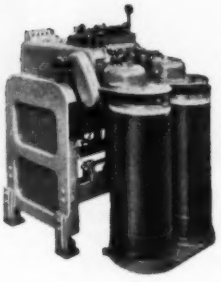
U. S. A. AGENTS FOR FRENCH SYSTEM MACHINERY: BLAKE ELECTRIC MFG. CO., 43 COMMERCIAL WHARF, BOSTON, 10

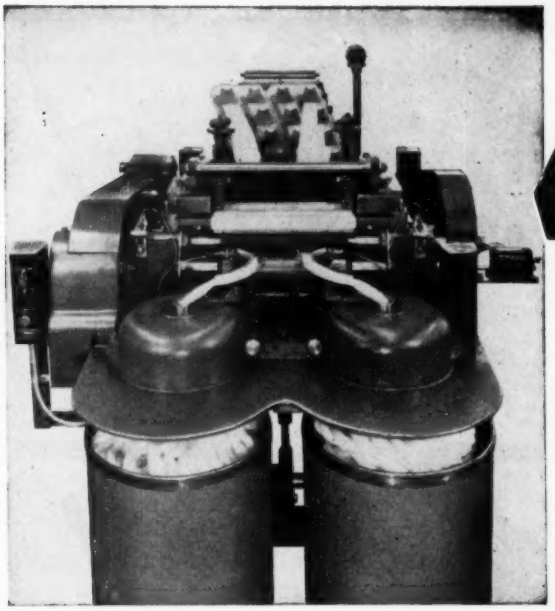


Second Operation — HOLDSWORTH SINGLE HEAD, TWIN DELIVERY GILL REDUCER

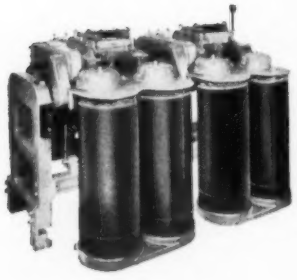
HOLDSWORTH

BRADFORD TYPE INTERSECTING GILL BOX *FOR THE FIRST DRAWING OPERATION* ON BLENDED SYNTHETICS AND WORSTED TOP

Third Operation — HOLDSWORTH SINGLE HEAD, TWIN DELIVERY GILL REDUCER



For the first operation after combing (or after a converter), the new Holdsworth Bradford Type Gill Box utilizes a heavier entrance sliver weight. It produces a well blended, open end, ideally suited to the "Abbreviated System" which follows. The usual Bradford Box apron has been removed and a three roll delivery arrangement with closer nip gives excellent fiber control and evenness of ends. The patented Holdsworth Fallers are interchangeable for pinnings from 11 to 15 per inch. Each head of fallers and screws delivers two ends into 15" diameter cans of 20 lb. coils. The machine is completely motorized and equipped with latest style stop motions. Holdsworth, America's most experienced maker of Gilling Machinery, would be glad to tackle your combing and drawing problems without any obligation to yourself. Write Atkinson, Haserick & Co. about this service.



4

Fourth Operation - HOLDSWORTH TWO HEAD, QUAD DELIVERY GILL REDUCER

48 hour repair service

Send Holdsworth Screws to be repaired direct to the plant, 55 Sabin St., Pawtucket, R. I. Within 48 hours we will send you a screw expertly repaired and of true pitch. We also repair all types of fallers.

RECUTTING GILL SCREWS

Atkinson, Haserick & Co.

Textile Machinery Agents and Engineers Since 1823

a.h.

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BOSTON 6, MASS.
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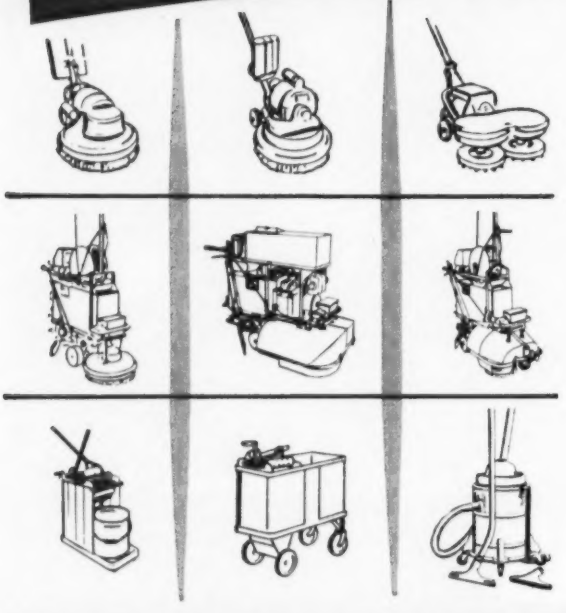
Keep your floor-maintenance men happy . . .

with Job-Fitted EQUIPMENT!

Choose from the COMPLETE Finnell Line

More than a score of models and sizes permits selection of the equipment that's exactly right for your job!



However much a maintenance man may want to do a good job, and at the same time show savings in labor costs, he's *stymied* if the machine is too small, or too large, or is otherwise unsuited to the job. Different floors and areas call for different care and equipment. That's why *Finnell makes more than a score of floor-maintenance machines.* From this complete line, it is possible to choose equipment that is correct in size as well as model . . . that provides the maximum brush coverage consistent with the area and arrangement of the floors.

Finnell makes *Conventional Polishing-Scrubbing Machines* in both concentrated and divided-weight types, each in a full range of sizes . . . a *Dry-Scrubber*, with self-sharpening brushes, for cleaning grease-caked floors . . . *Combination Scrubber-Vac Machines* for small, vast, and intermediate operations, including gasoline as well as electric models . . . *Mop Trucks* . . . *Vacuum Cleaners* for wet and dry pick-up, including a model with By-Pass Motor. In addition, *Finnell* makes a full line of fast-acting *Cleansers* for machine-scrubbing . . . *Sealers* and *Waxes* of every requisite type . . . *Steel-Wool Pads*, and other accessories — *everything for floor care!*

In keeping with the *Finnell* policy of rendering an individualized service, *Finnell maintains a nation-wide staff of floor specialists and engineers. There's a Finnell man near you* to help solve your particular floor-maintenance problems . . . to train your operators in the proper use of *Finnell Job-Fitted Equipment and Supplies* . . . and to make periodic check-ups. For consultation, demonstration, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1905 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

Originators of Power Scrubbing and Polishing Machines

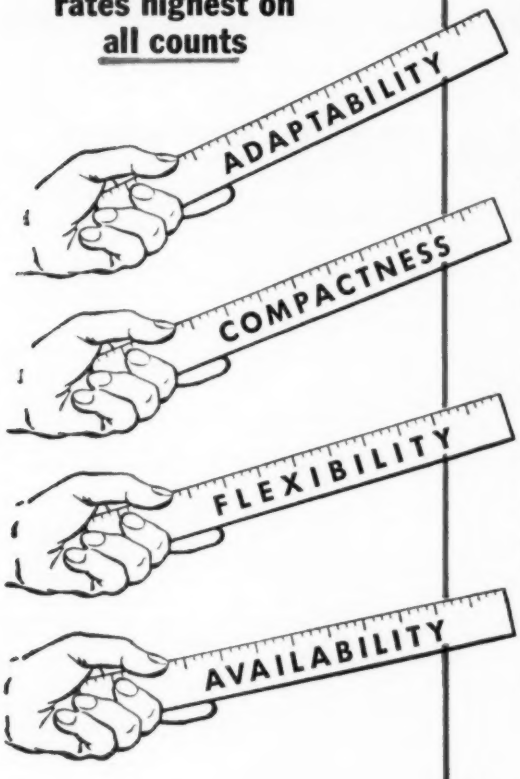
50th Anniversary — FINNELL — Everything for Floor Care

BRANCHES IN ALL PRINCIPAL CITIES

Four ways to measure

REAL PUMPING ECONOMY

You'll find that the I-R MOTORPUMP rates highest on all counts



The Motorpump line is so complete that you can get a pump that's designed to handle your particular capacity and head requirements at *maximum efficiency*. Sizes range from ¼ to 50 hp, for capacities from 5 to 1800 gpm and heads to 650 ft.

The space-saving design and light weight of the unit-type Motorpump cut installation costs. Motorpumps can be mounted in "close quarters" where no other type of pump would fit. No special foundations are required.

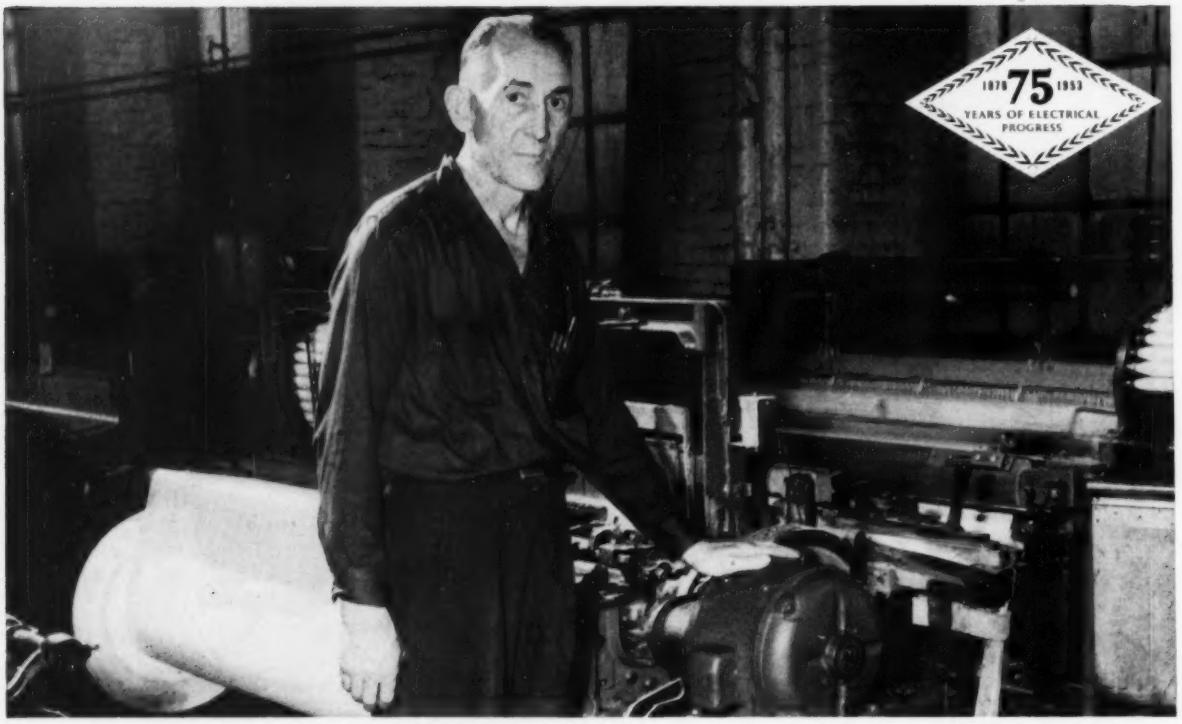
Motorpumps operate equally well in *any position*—can be mounted horizontally, vertically, or any angle; on floor, wall, columns or ceiling. This flexibility of mounting often permits simpler and more economical piping arrangements.

Despite current shortages of many industrial products, you can still get prompt delivery on Ingersoll-Rand Motorpumps. Most of the popular sizes are carried in stock and can be delivered immediately from branch or factory. This avoids costly delays—both in pump replacement and new installations.

MOTORPUMP **Ingersoll-Rand**

11 BROADWAY, NEW YORK 4, N. Y. 758-9

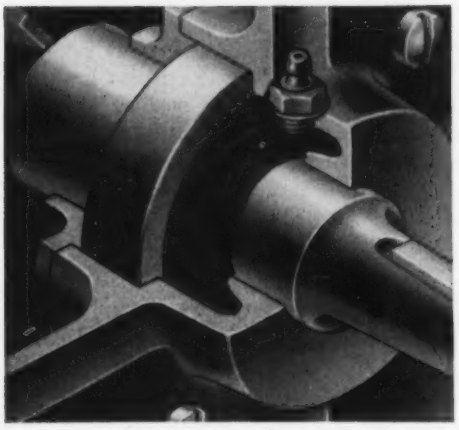
ROCK DRILLS • COMPRESSORS • AIR TOOLS • CENTRIFUGAL PUMPS • TURBO BLOWERS • CONDENSERS • DIESEL AND GAS ENGINES



"Our G-E ball-bearing loom motors . . .

. . . mean less downtime, easy service"

says Webb R. Cashion, master mechanic, Cone Mills Corporation, Greenville, S. C.



BOTH SIDES OF BEARING are surrounded with large grease reservoirs to assure more continuous operation under tough, pulsating loom loads.

"Because G-E ball-bearing loom motors are easy to re-grease, we've been able to set up a smooth-running service schedule," says Master Mechanic Webb R. Cashion of the Cone Mills Corporation, Florence Division, American Spinning Plant at Greenville, S. C.

"We don't need to tear down these motors for re-greasing. All we do is take out the drain plugs and give the bearings two or three quick shots with a grease gun."

G-E ball-bearing loom motors stand up under the rigid speed and torque requirements of today's looms. Rugged cast-iron stator frames and end shields, and totally-enclosed stator construction simplify installation and upkeep. Careful electrical design adds extra life and reliability. For more information, contact your G-E Apparatus Sales representative or write for Bulletin GEA-5858. General Electric Co., Schenectady 5, N. Y. 654-27

Years of service—
then *easy* relubrication!

Bearing lubrication is no problem here. Grease reservoirs contain more than four times as much grease as in conventional sealed bearing construction. Bearing housing holds grease in constant contact with bearings. Eventually, lubrication will be necessary to length bearing life. You do it with a grease gun—without removing the end shields!

You can put your confidence in—

GENERAL ELECTRIC

see for yourself why

IN WET PROCESSING COTTON

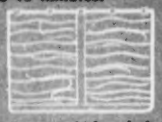
there's nothing like

Nacconol*

AMERICA'S LEADING SYNTHETIC DETERGENT

RAW-STOCK DYEING

2-3 lbs. in last rinse water
Raise temperature from 110-130°F. for 10 to 15 minutes.



Stock opens better in kickers before entering dryer. Faster drying at lower temperature. Reduced fire hazard. Stock softened; spinning characteristics improved.

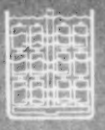
KIER BOILING RAW STOCK AND PIECE GOODS

2-5 lbs. per 1000 lbs. of cotton in kier.

Cuts alkali consumption as much as 24%.
Reduces bleach requirements up to 17%.
Doubles absorbency.

PACKAGE AND BEAM SCOURING

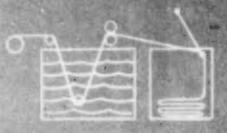
1 to 2 lbs. per 100 gals. scouring liquid plus 3 to 4 lbs. Soda Ash.



Cleaner cotton. More rapid rinsing
Better bottom for dyeing

PIECE-GOODS DESIZING

1-2 lb. to 100 gals. desizing liquor.



More rapid penetration of goods
More rapid desizing action
Reduction of enzyme requirements

CONTINUOUS PEROXIDE BLEACHING OF COTTON

½ to 1 lb. per 100 gals. of Caustic liquor
1 to 2 lbs. per 100 gals. of Peroxide liquor
1 to 2 lbs. per 100 gals. of wash water
Trickle feed Nacconol to hold .20-.25% concentration in Sulfuric dip.

Better removal of motes, waxes and pectins
Whiter goods. Less dye resists
Reduced bleach requirements.

PIECE-GOODS SCOURING (HEAVY FABRICS)

¼-½% Nacconol added to 1% Caustic solution

As clean goods with ¼-½% Nacconol solution as with higher alkali concentrations alone.
Minimizes bleach-solution consumption.
Satisfactory boil-off in 1/3 to 1/2 less time

SOAPING OFF DYED PIECE-GOODS AND PRINTS

1 to 3 lbs. per 100 gals. of water plus 3 to 4 lbs. Tetrasodium Pyrophosphate, Sodium Sulphate or Sodium Chloride.

Faster rinsing. Cleaner shades. Less crocking.

PIECE-GOODS DYEING

2-3 oz. Nacconol NRSF per 100 lbs. of cotton.

Better dye penetration
More level dyeing. Less streaks
More rapid washing after dyeing.

The proof of the product is its performance. NACCONOL continues to lead in performance and production for the textile industry because it provides the balanced properties necessary for better wetting and washing from the kier to the finished cloth. For best results, order NACCONOL from our nearest office.

NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION

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San Francisco 5, Cal., 517 Howard St.	SUtter 1-7507	Chattanooga 2, Tenn., James Building	CHattanooga 6-6347
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Chicago 54, Ill., The Merchandise Mart	SUperior 7-3387	New Orleans 12, La., 714 Carondelet Bldg.	Raymond 7228
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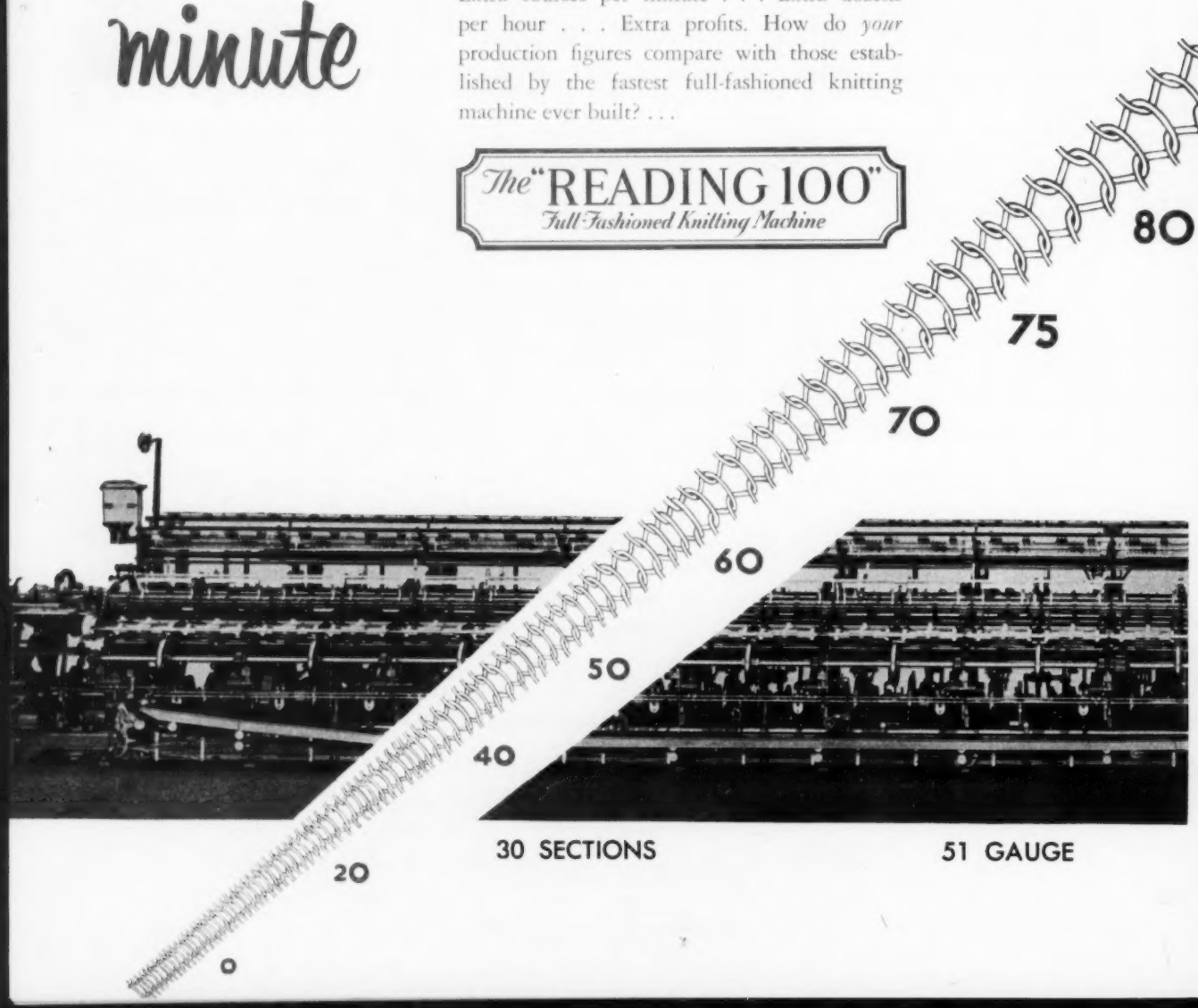
Allied Chemical

It knits 100 courses per minute

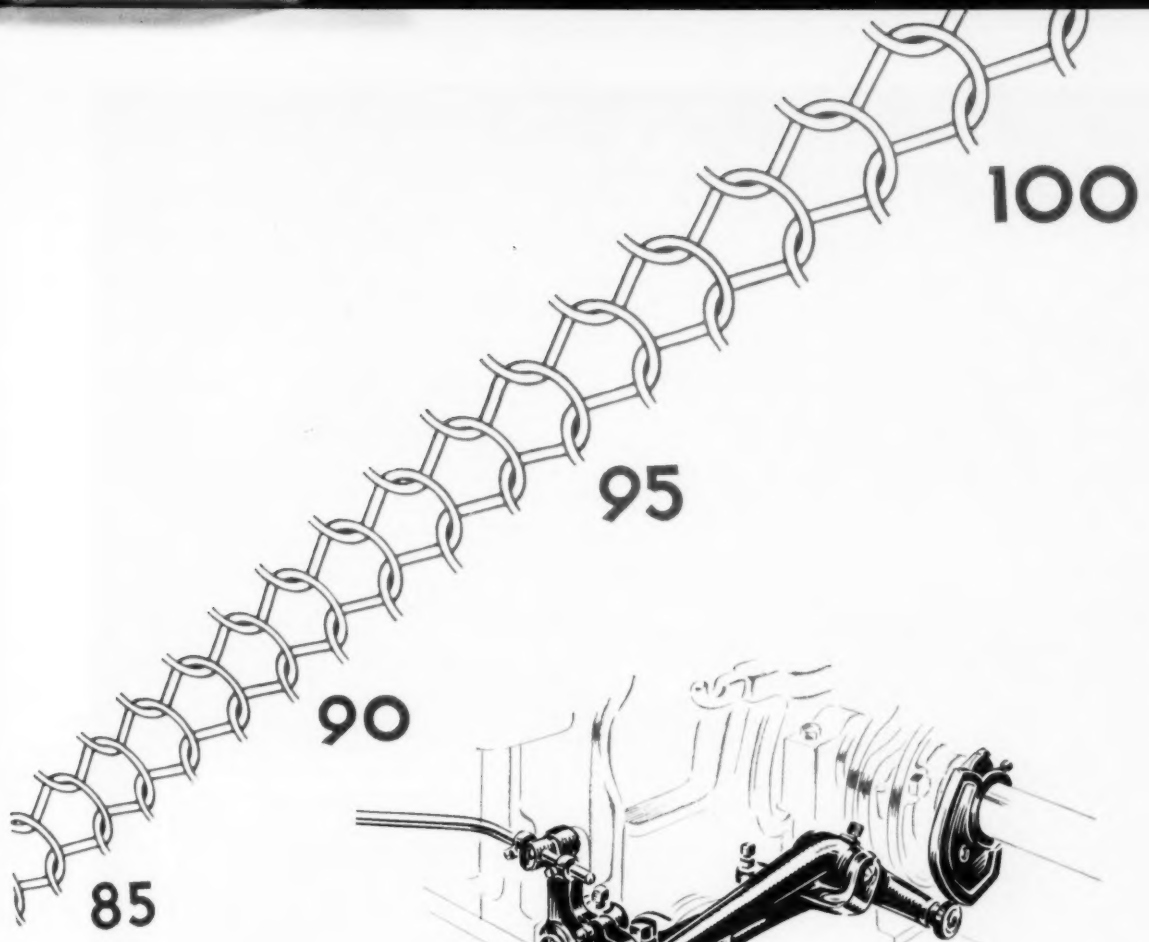
Extra courses per minute . . . Extra dozens per hour . . . Extra profits. How do *your* production figures compare with those established by the fastest full-fashioned knitting machine ever built? . . .

The "READING 100"
Full-Fashioned Knitting Machine

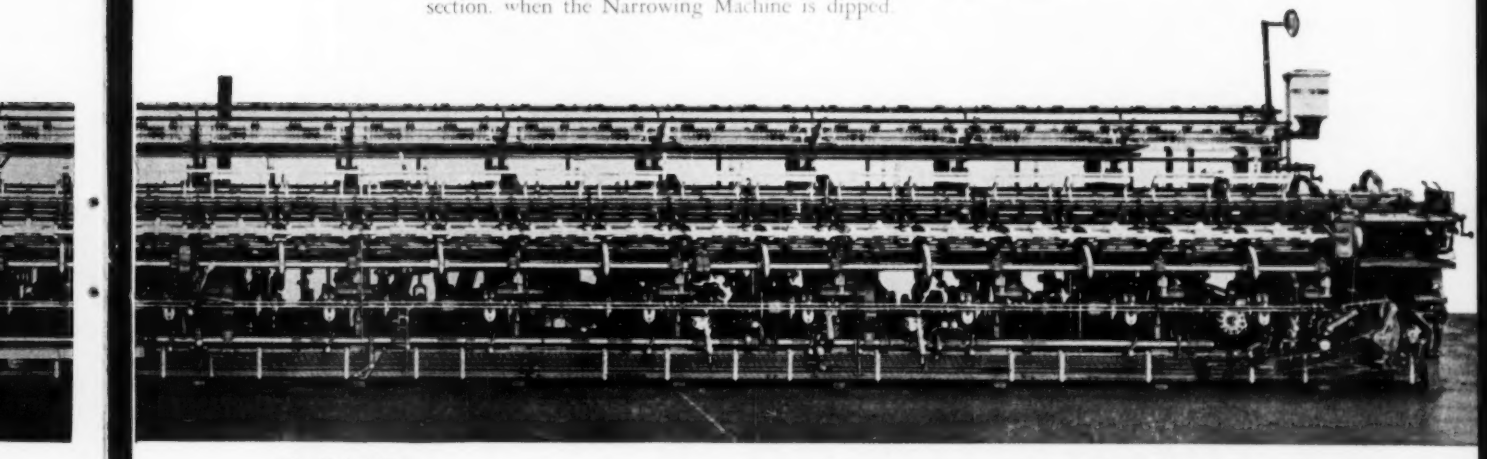


30 SECTIONS

51 GAUGE



Improved Inside Selvedge Attachment . . . assures a clean, even selvedge during narrowing or widening while the reinforced section of the fabric is being knitted. Prevents excess yarn from being fed around the next sinker, beyond the inside edge of the reinforced section, when the Narrowing Machine is dipped.



60 GAUGE

66 GAUGE

TEXTILE MACHINE WORKS
READING, PENNA., U. S. A.

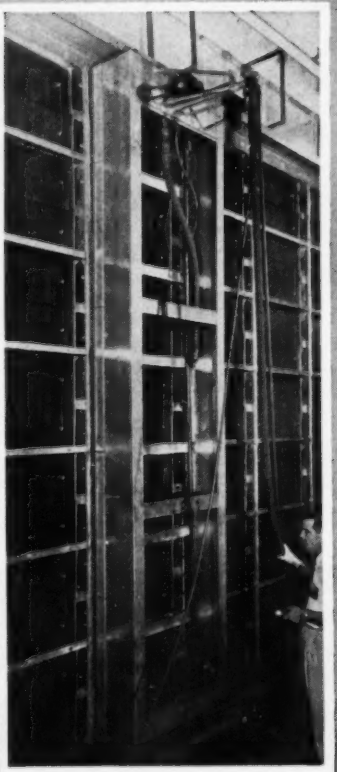
Plant at Greenville, S. C.; N. Y. Sales Agents: Deering Milliken Co.

SMOKE SPUN INTO YARN?

Yes, it used to be at Judson Mills. Cost them money, too, for it made the yarn streaky and smudgy, and much of it had to be sold as dark shades rather than as premium-commanding light or pastel shades. To complicate things, light shades produced in winter for the spring and summer markets were getting the full effect of all the smoke and soot thrown into the air by nearby factories and residences.

But Judson began engineering these dirt losses right out of their mill in 1940 with PRECIPITRON,® the electronic air cleaner. Their first installation was so successful that they have since added over 1,000,000 cfm capacity. Now the bulk of their production is in the light shades.

Let air cleaning, air conditioning or air handling *put air to work* for you. Call your Westinghouse-Sturtevant office, or write Westinghouse Electric Corporation, Sturtevant Division, Hyde Park, Boston 36, Mass.



Judson Mill's PRECIPITRON units with semi-automatic washer not only give them top air cleaning efficiency, they also simplify the dirt disposal problem. Washer boxes automatically flush dirt off collector plates, leave unit ready for next cycle.

YOU CAN BE SURE...IF IT'S

Westinghouse

J-80237B

Why Select Pittsburgh Dyestuffs?

Here are 4 Good Reasons

1 Basic Position

Pittsburgh is a basic producer of dyestuffs. Every step of production, from coal to finished color, is rigidly controlled in a single, integrated plant. Pittsburgh's Coal Chemical Division provides the new Fine Chemicals plant with an unfailing source of dye-making chemicals, including sulphuric acid, phthalic anhydride, benzol, phenol and pyridine. This assures you uniform high quality and dependable supplies, regardless of marketing conditions.

2 Modern Production Equipment

Completed early this year, the Pittsburgh Fine Chemicals plant is engineered and equipped with the most modern production equipment. Stainless steel and glass lined reaction vessels enable a high degree of purity standardization. Most materials are efficiently conveyed through pipes, and reactions are controlled by automatic equipment. The plant is also equipped with modern solvent recovery and waste disposal systems.

3 Complete Quality Control

To carry on the exacting quality control exercised by Pittsburgh's Coal Chemicals Division in the production of dye intermediates, the Fine Chemicals plant maintains modern and completely equipped research, analytical and applications laboratories where all production and application processes can be duplicated on a laboratory scale. A continuing research and development program is conducted to produce new and better products and improved application techniques.

4 Efficient Customer Service

Working closely with the applications laboratory, the Customer Service Department of the Fine Chemicals Division provides you with laboratory or plant assistance in the application of Pittsburgh Vat Dyes. Through this department, the complete laboratory facilities of the division are at your service, to help you achieve better and more efficient dyeing results.

. . and of course,
for your convenience,
Pittsburgh Dye Drums
are Color-Coded

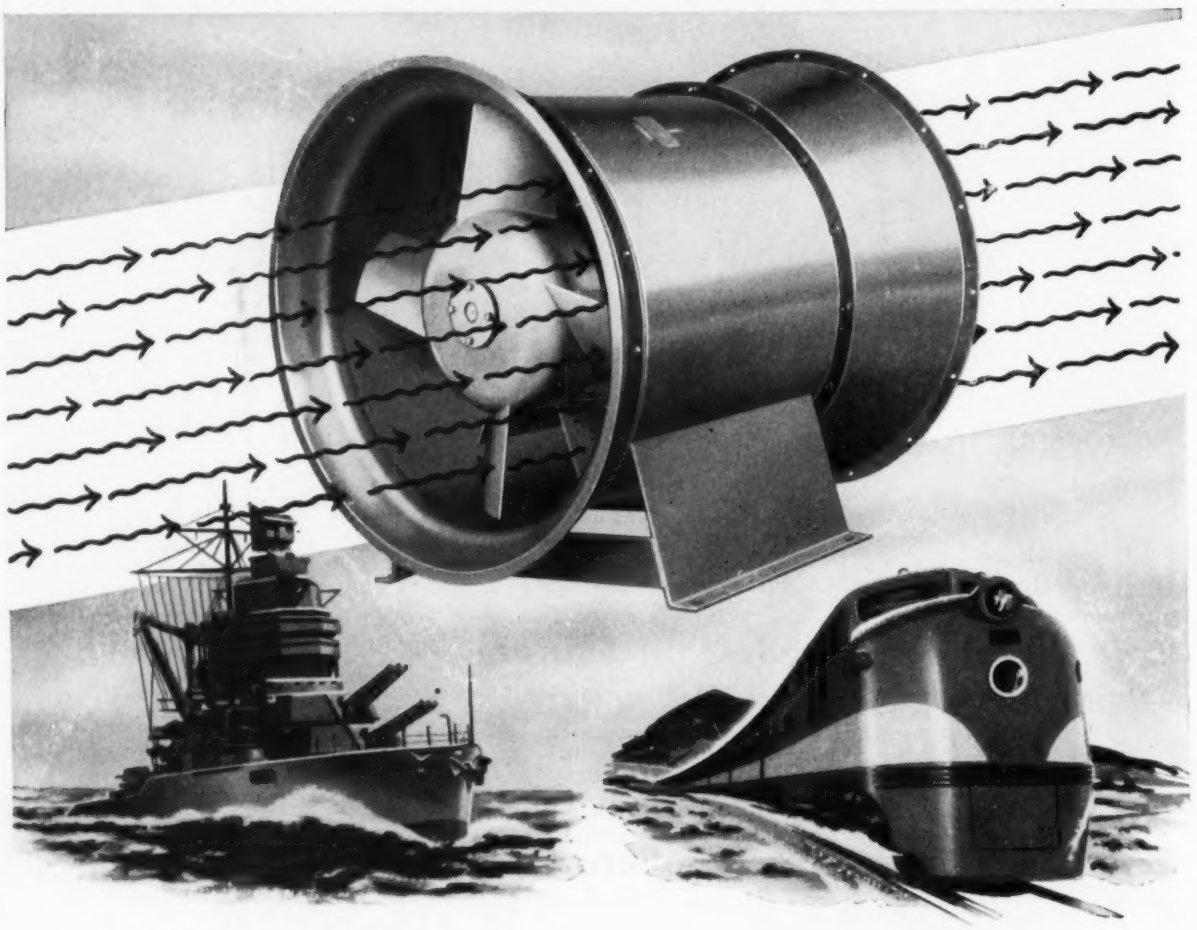
W&D 4681

FINE CHEMICALS DIVISION
Dyestuffs

PITTSBURGH
COKE & CHEMICAL CO.
Grant Building . Pittsburgh 19, Pa.

COAL CHEMICALS • AGRICULTURAL CHEMICALS • FINE CHEMICALS • PROTECTIVE COATINGS • PLASTICIZERS • ACTIVATED CARBON • COKE • CEMENT • PIG IRON

Save with American Blower Axial Fans



Dependable, low cost ventilation!

The Navy demands it on battlewagons . . .

Railroads specify it for modern streamlined trains . . .

Commerce and industry require it for the conduct of profitable business . . .

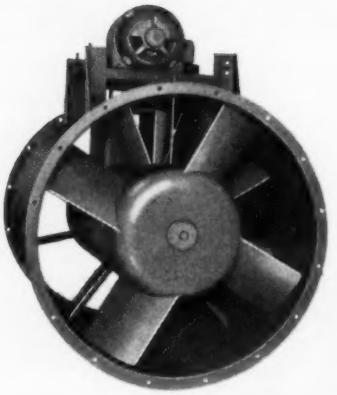
No one company has done more to provide dependable low cost ventilation than American Blower.

For example, American Blower Axial Fans are widely used in thousands upon thousands of varied applications, and are unsurpassed for ease of installation and efficient performance.

For complete information on axial fans and other American Blower Air Handling equipment, contact our nearest branch office.

AMERICAN BLOWER CORPORATION, DETROIT 32, MICHIGAN
CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO
Division of American Radiator & Standard Sanitary Corporation

AMERICAN BLOWER
YOUR BEST BUY IN AIR HANDLING EQUIPMENT



American Blower Axial Fans are smooth in performance, built for endurance and convenient to install.

Serving home and industry: AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS & WALL TILE • DETROIT CONTROLS • KEWANEE BOILERS • ROSS EXCHANGERS

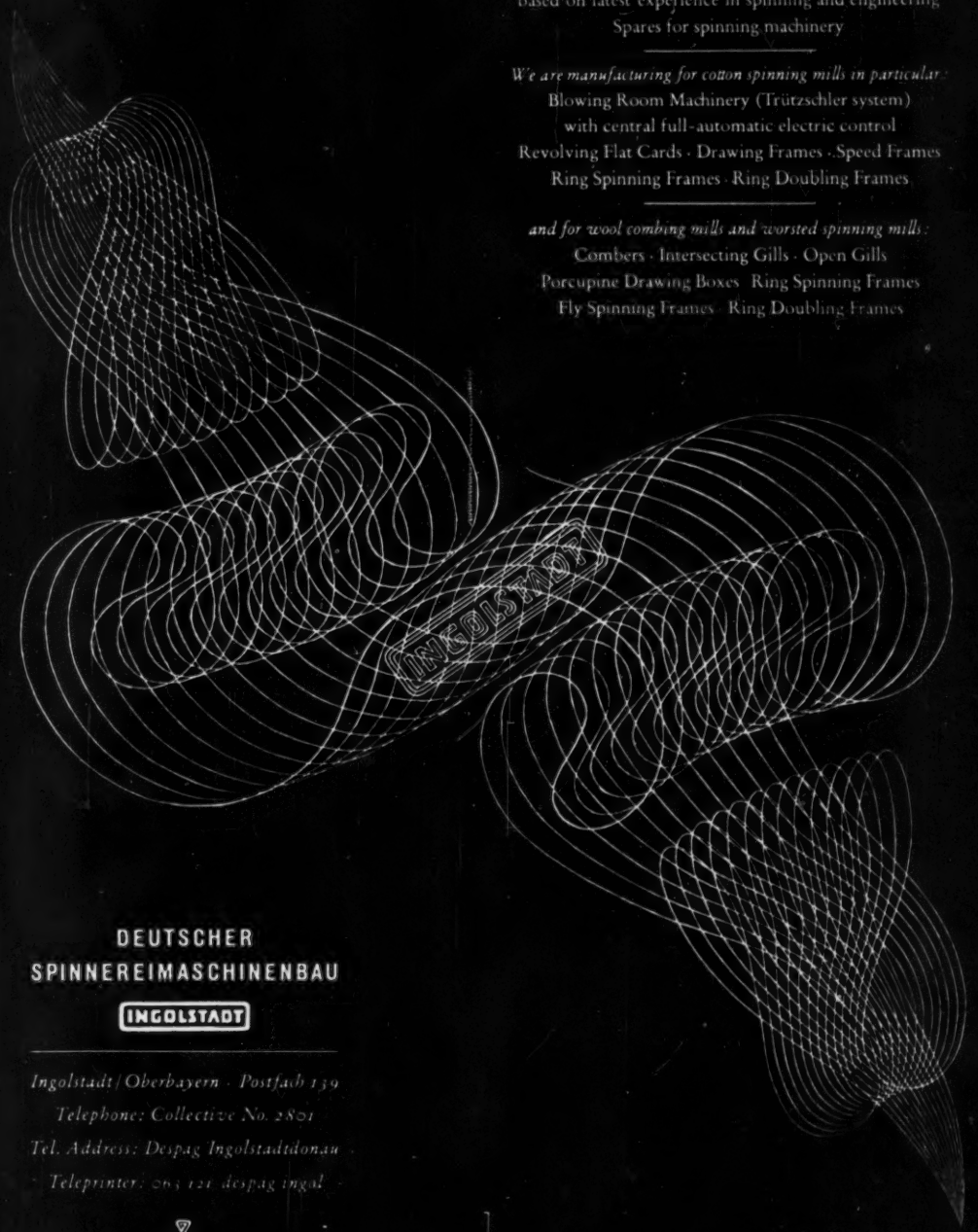
SPINNING MACHINERY

FOR COTTON, STAPLE FIBRE AND WORSTED

Design and supply of complete spinning plants
based on latest experience in spinning and engineering
Spares for spinning machinery

We are manufacturing for cotton spinning mills in particular:
Blowing Room Machinery (Trützschler system)
with central full-automatic electric control
Revolving Flat Cards · Drawing Frames · Speed Frames
Ring Spinning Frames · Ring Doubling Frames

and for wool combing mills and worsted spinning mills:
Combers · Intersecting Gills · Open Gills
Porcupine Drawing Boxes · Ring Spinning Frames
Fly Spinning Frames · Ring Doubling Frames



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Tel. Address: Despag Ingolstadtdonau
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for more production

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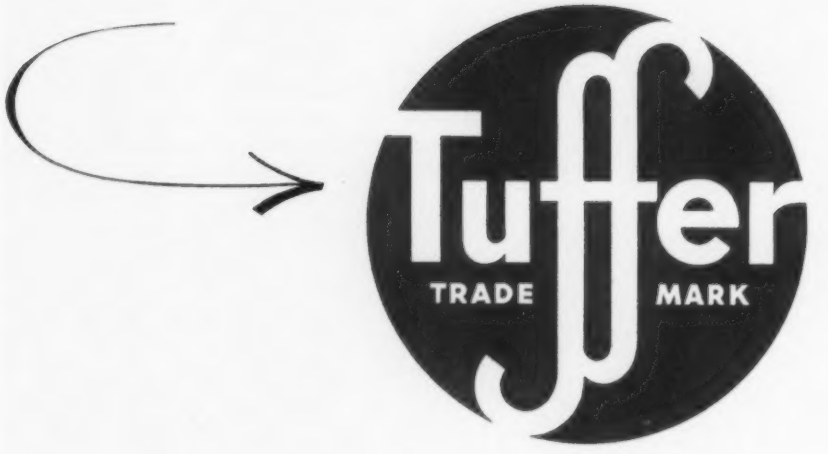


CARD CLOTHING

Maximum output from your card room depends to a large degree upon the selection of the proper Card Clothing, the correct size of wire, proper foundation and the right know-how of operating speeds and settings.

Make sure you start with the right Card Clothing — TUFFER of course. Every type made, from the coarsest wire to the finest—in any foundation you specify—is available at the home of TUFFER.

Team up your operating skill with TUFFER Card Clothing quality to get the most your cards can produce.

TUFFER PRODUCTS

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Re-covered and extra sets loaned at all plants. Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Top Flat Chains

HOWARD BROS.

A-4

WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga. and Gastonia, N. C.
Branch: Philadelphia, Pa. *Direct Representation in Canada*

For more information, write direct or use Reader Service post card.

INDUSTRY'S ALL-TIME FAVORITE FOR LONG RANGE *Economy*

JENKINS
Fig. 106-A
Renewable Composition Disc

BRONZE GLOBE VALVE

150 lbs. Steam
200 lbs. O.W.G.

Take a Jenkins Fig. 106-A apart. It's easy to see why it is industry's all-time favorite. Note the liberal dimensions of body and bonnet casting — the heavy, manganese bronze spindle, with more strong threads in contact with the bonnet, regardless of spindle position. See how the slip-on, stay-on disc holder fully protects the edge of the disc, prevents creeping, flaking, or cracking.

Every part, from perfect grip, heatproof handwheel to pipe ends, reflects the designing skill of Jenkins valve *specialists.* There's a good reason. Jenkins Bros. introduced the *first* renewable composition disc valve, — is today the only manufacturer of both valves *and* discs.

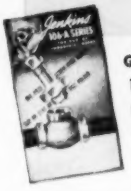
Fig. 106-A not only looks better — it proves out better in performance. In any comparison, its long life, low upkeep record has never been surpassed. That is the true measure of valve cost — and it is the reason why industry's shrewdest buyers will settle for nothing less than Fig. 106-A quality.

JENKINS VALVES

LOOK FOR THE DIAMOND MARK

SINCE 1864 TRADE JENKINS MARK

Jenkins Bros



GET THIS FOLDER — Gives details of Fig. 106-A design, and "family" interchangeability. Ask your Jenkins Distributor for Form 189-A, or write Jenkins Bros., 100 Park Ave., New York 17.

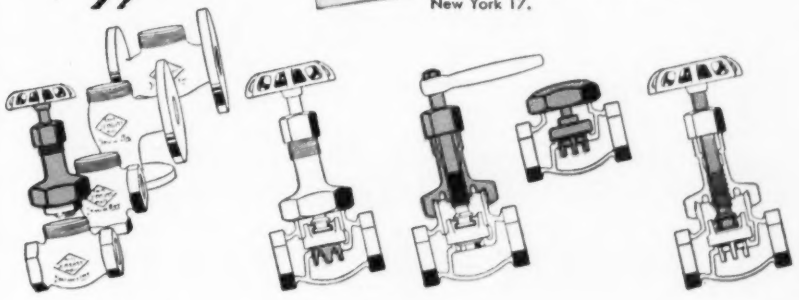
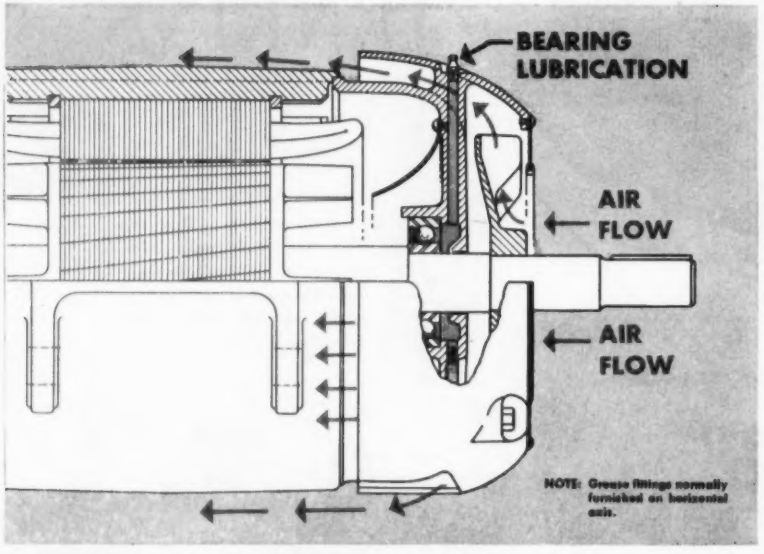
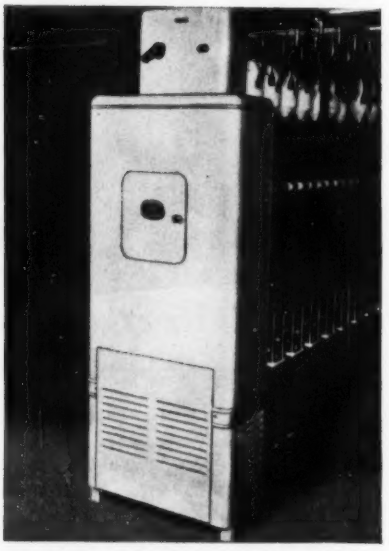


Fig. 106-A "Family" Interchangeability meets 90% of your valve needs with a small inventory of parts. Start with the standard Fig. 106-A. Trimming is interchangeable in Globe or Angle body, screwed or flanged. With a few parts, quickly-assembled combinations provide a Lift Check, a Spring-loaded Check, and valves for Stop and Check, Quick-opening, or Throttling service.

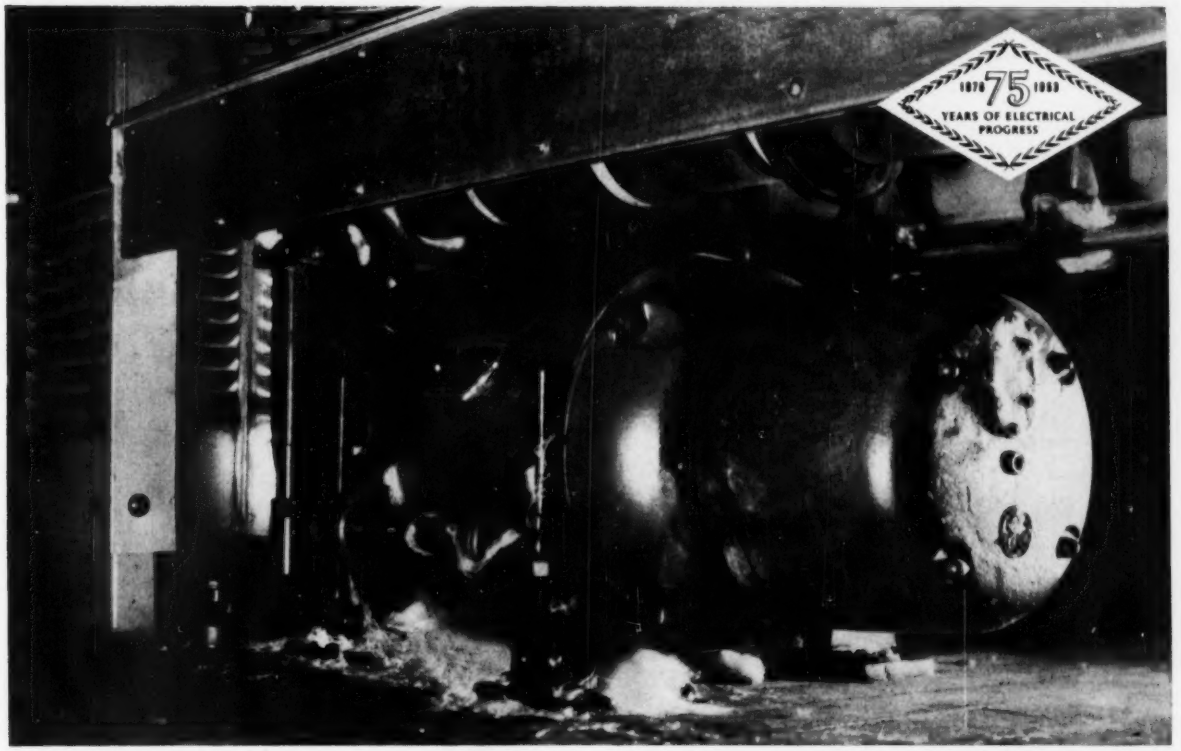
SG-1 Gwaltney spinning frames



MAINTENANCE TIME IS REDUCED because positive lint-expulsion keeps motor clean, large grease reservoirs and convenient pressure-relief fittings make lubrication infrequent and easy—without disassembly.



STREAMLINED MOTOR CONTROL is compact, conveniently-located, designed especially for the SG-1 frame.



AISLE SPACE IS SAVED because compact, totally-enclosed, fan-cooled G-E motor is mounted beneath the SG-1 spinning frame. Non-clogging design of external cooling fan and fan housing allows free passage of lint-laden air.

driven by new-type G-E motors

Two motor designs—fan- or water-cooled—meet all mill needs

WATER-COOLED DESIGN uses large-diameter Saran tubing wound directly around coil ends—assures maximum cooling efficiency.

Saco-Lowell's new SG-1 Gwaltney spinning frame—the latest in modern textile machinery—required equally new motor designs.

First, Saco-Lowell engineers drew up complete drive requirements. Then they worked with the General Electric design and application engineers who developed the two new types of SG-1 spinning frame motors: one, totally-enclosed, fan-cooled, non-clogging; the other, totally-enclosed and water-cooled.

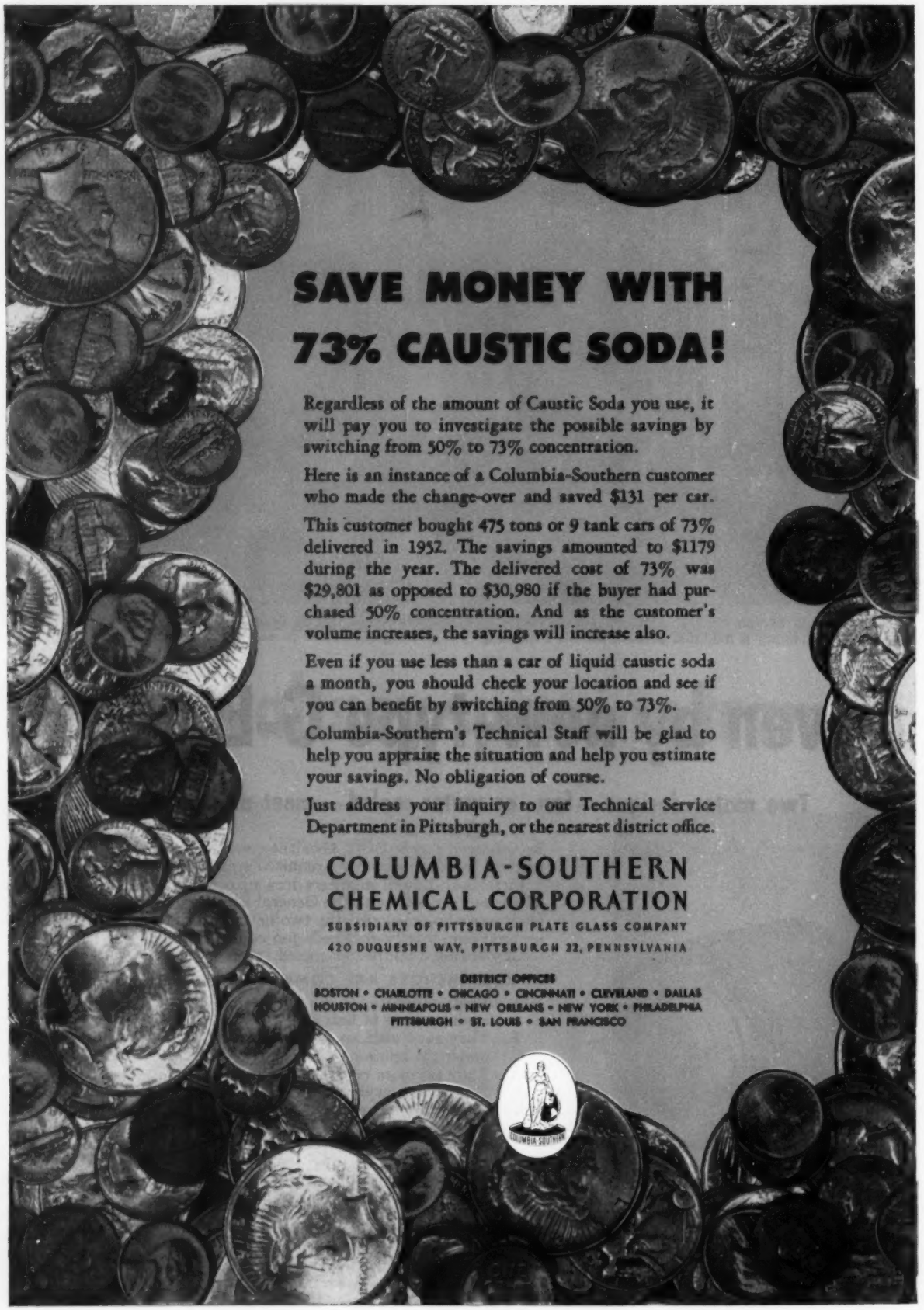
BOTH MOTORS ARE COMPACT, EFFICIENT, DEPENDABLE

1. They minimize cleaning problems. Both motors are protected against entry of lint.
2. They save aisle space. Both are compactly designed to fit under the spinning frame.
3. They promote even spinning room temperatures.
4. They take varying spinning loads in stride.
5. They simplify maintenance. Grease fittings are conveniently located on sides of motor. Relubrication is easy—and infrequent.

Your G-E apparatus sales representative can give you further details. General Electric Co., Schenectady, New York 654-28

Engineered Electrical Systems for Textile Mills

GENERAL ELECTRIC


SAVE MONEY WITH
73% CAUSTIC SODA!
Regardless of the amount of Caustic Soda you use, it will pay you to investigate the possible savings by switching from 50% to 73% concentration.
Here is an instance of a Columbia-Southern customer who made the change-over and saved $131 per car.
This customer bought 475 tons or 9 tank cars of 73% delivered in 1952. The savings amounted to $1179 during the year. The delivered cost of 73% was $29,801 as opposed to $30,980 if the buyer had purchased 50% concentration. And as the customer's volume increases, the savings will increase also.
Even if you use less than a car of liquid caustic soda a month, you should check your location and see if you can benefit by switching from 50% to 73%.
Columbia-Southern's Technical Staff will be glad to help you appraise the situation and help you estimate your savings. No obligation of course.
Just address your inquiry to our Technical Service Department in Pittsburgh, or the nearest district office.
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TESTS PROVE Important Advantages of Litholine!

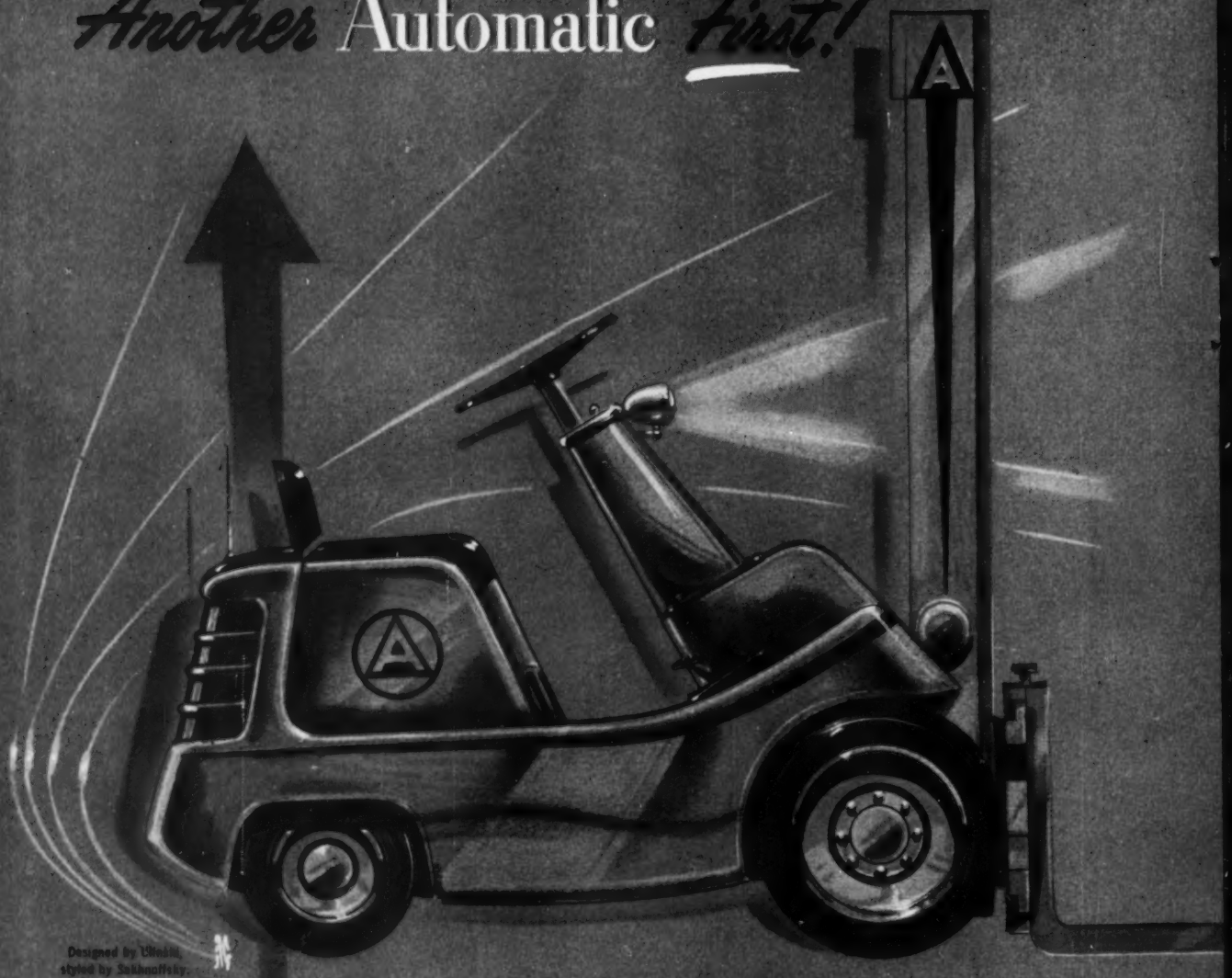
A demonstration of the outstanding quality of LITHOLINE® Multi-Purpose Grease won wide attention at the Southern Textile Exposition. And no wonder! Here was actual, visual proof of how LITHOLINE meets—and *beats*—the toughest lubricating conditions to be found in a textile mill. LITHOLINE maintained its superior qualities, lubricated effectively at –25°F... at 250°F... and under water!

Backed by facts, proved by performance in many mills, LITHOLINE has solved and will solve many problems encountered by textile overseers and foremen. Why not let it solve your lubrication problems, too? Contact your nearest Sinclair Representative or write Sinclair Refining Company, 600 Fifth Avenue, New York 20, N. Y.

SINCLAIR TEXTILE LUBRICANTS

save wear and replacement

Another Automatic *First!*



Designed by Ullrich, styled by Sakhnoffsky.

HERE'S WHAT DYNAMOTIVE ELECTRIC TRANSMISSION MEANS TO YOU:

No gears to shift • No clutch to manipulate • No engine shock due to clutching • No hydraulic torque converter • No over-drive mechanism • No mechanical connection from engine to drive unit • Maximum comfort and ease of operation for driver • Foot operated lift and tilt • Interlocked dual brake system for maximum safety • Electric truck reliability • Infinite acceleration range with minimum power loss • Engine speed automatically adjusts to load requirement • Minimum engine wear—maximum life • Less fuel consumption • All advantages of torque converters and overdrive without mechanical devices • Minimum down time • Maximum accessibility • No aisle projections.

Plus these Automatic industry-proved features:

Silicone insulation for drive motor and generator • Heavy section rolled manganese alloy steel uprights • Ball bearing mounted carriage and upright rollers • Hydraulic safety fuses (with duo lift).

Automatic ®
97 W. 87th St., Dept. E-3,
Chicago 20, Illinois

Please send me information about your new Dynamotive Gas-Electric truck.

Company Name_____

By_____ Title_____

Street Address_____

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AMERICA'S FIRST GAS TRUCK WITH ELECTRIC TRANSMISSION

The new Automatic

DYNAMOTIVE

Entirely new engineering design produces America's first and only Gas Fork Lift Truck with Electric Transmission. No clutch! No gears to shift! No hydraulic torque converter or over-drive mechanism.

This new Dynamotive Gas Truck does for users of materials handling equipment what modern diesel-electric power has done for American Railroads. Its electric, infinite step transmission has no mechanical connections . . . transmits no "clutch shock" to engine . . . but brings to your materials handling jobs that fully controlled smooth flow of power which insures maximum economy and efficiency.

Automatic

WORLD'S LARGEST EXCLUSIVE BUILDER OF ELECTRIC DRIVEN INDUSTRIAL TRUCKS

Reliance Spinning-Frame Motor drives the Saco-Lowell Gwaltney Spinning Frame.

HERE'S WHY—

Saco-Lowell Recommends Reliance Motors for Your New Gwaltney Spinning Frames

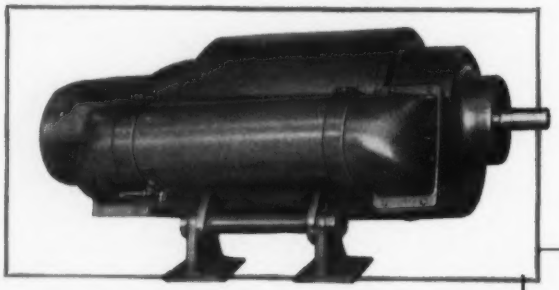
Reliance Totally-Enclosed Dual-Cooled Spinning-Frame Motors offer the advantages of water cooling without the disadvantages of conventional water-cooled motors. Heat is carried out of the room by water, thus reducing the load on the air-conditioning system. The unique Reliance cartridge-type heat exchanger which makes this possible can be removed for inspection or replaced by one man in three minutes without stopping the motor or disturbing its mounting.

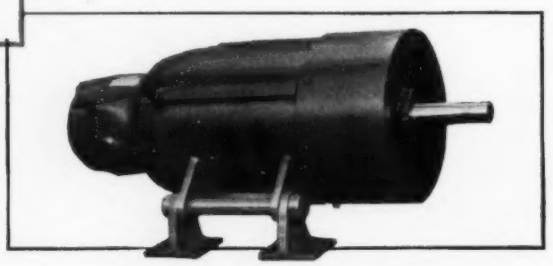
These a-c. motors have all features of Reliance PRECISION-BUILT Motors including the matchless Reliance pre-lubricated bearing . . . "You Can't Grease 'em Wrong".

For mills using air-cooled motors, Reliance offers a new totally-enclosed, fan-cooled design.

For more information, call one of the 52 convenient Reliance Sales Offices or write for Bulletins B-2301 and B-2302.

B-1458





(Above) Reliance Totally-Enclosed Dual-Cooled Spinning-Frame Motor. (Right) Reliance Totally-Enclosed Fan-Cooled Spinning-Frame Motor. Axial-flow fan blows cooling air over the motor and several yards beyond, eliminating any "hot spots". Smooth contours prevent accumulation of lint on motors.

RELIANCE ELECTRIC AND ENGINEERING CO.

1086 Ivanhoe Road, Cleveland 10, Ohio • Sales Representatives in Principal Cities

Gulfspin keeps spindles clean!

Here's why:

1. Resists formation of sludge

2. Prevents sludge from depositing on spindle surfaces

Spindle blades and bolsters stay clean when they are lubricated with the new Gulfspin.

Here is the important reason! Gulfspin not only has the inherent ability to resist the formation of harmful sludge, but also prevents sludge from depositing. And during periods when oil levels are low, Gulfspin's protective film insures against the formation of rust. Thus the need for costly cleaning of spindles and bolsters is eliminated—parts wipe clean easily.

Gulfspin has excellent oiliness characteristics. It reduces the rate of bolster wear experienced with ordinary oils, insures freedom from spindle wobble.

Gulfspin, unlike conventional spindle oils, does not appreciably increase in viscosity even after extended use. This accounts for reports from users telling of substantial savings in power costs.

See for yourself—on your frames—that this new spindle oil is better in every way. Or write today for copy of a pamphlet on this outstanding new oil.

Gulf Oil Corporation · Gulf Refining Company
Gulf Building, Pittsburgh 30, Pa.

GULF SERVES INDUSTRY

Woolen Mills Increase Quality

Dayco Rub Aprons and

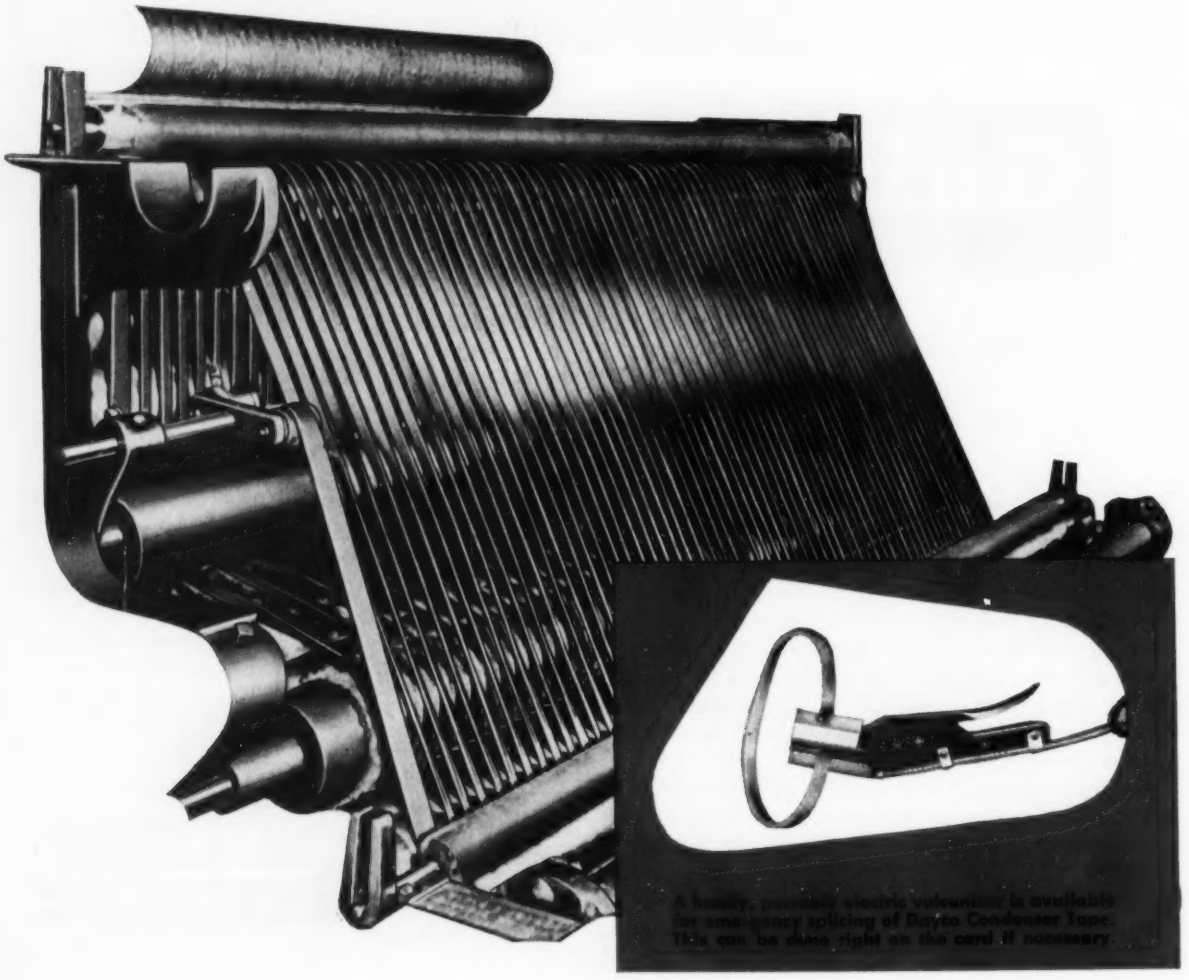
Cleaner, more uniform web is Now Obtainable From Dayco Endless Condenser Tape

Accurate splitting of the web is assured with Dayco Condenser Tape since it fits the groovings in the steel rollers exactly. This naturally assures more uniform rovings from the card.

Because all stretch in Dayco Condenser Tape has been removed during its manufacture, frequent take-ups by the tension device are no longer necessary. This reduces maintenance costs.

Since Daycos have no stretch, they have less tendency to turn over or twist in operation. Also, they are easier to keep clean, are unaffected by oil, and are static free. Daycos have proper coefficient of friction, will not crack, and are made uniform in size to very close tolerances.

To get top quality production from your cards, be sure they are equipped with Dayco Condenser Tape. For further information, get in touch with your Dayco Representative.

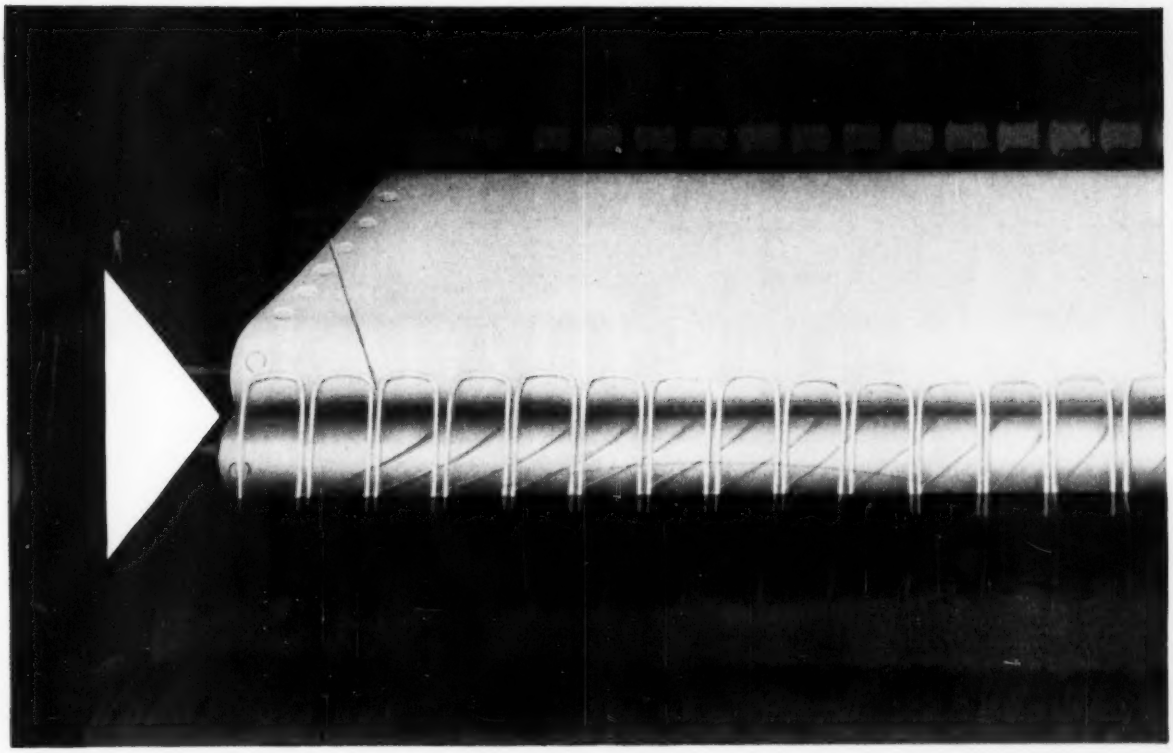


A handy, portable electric vulcanizer is available for emergency splicing of Dayco Condenser Tape. This can be done right on the card if necessary.

For more information, write direct or use Reader Service post card.

# of Yarn Production With

Dayco Condenser Tape



Mill Tests Reveal Up to 33% More Uniform Yarn Obtainable with Dayco Rub Aprons

Many mills insist on Dayco Rub Aprons because Daycos enable them to get more uniform yarn from their cards. This is possible because Daycos have a greater co-efficient of friction. And they perform their job without being affected by the abrasion of constant rubbing.

The carefully designed fabric and rubber construction of Dayco Rub Aprons withstands constant flexing with little or no fatigue, thus enabling them to perform efficiently over a longer period of time. This results in fewer shutdowns, reduced maintenance costs and a better production record for each carding machine.

Daycos are trouble-free. They're easy to adjust, and once installed they "stay put." They generate no static, are unaffected by humidity or temperature changes, and absorb no color pigments from dyed wool.

Under actual mill tests Dayco Rub Aprons made it possible to produce 33% more uniform yarn and at the same time reduce eccentric motion as much as 30%. As a result many woolen and worsted mill operators are enthusiastic about Daycos. If you are not already using them, get in touch with your Dayco representative, or write direct to Dayton Rubber.

Dayton Rubber

Since 1905

TEXTILE PRODUCTS FOR BETTER SPINNING AND WEAVING

Dayton Rubber Co., Textile Division, Woodside Bldg., Greenville, S. C.

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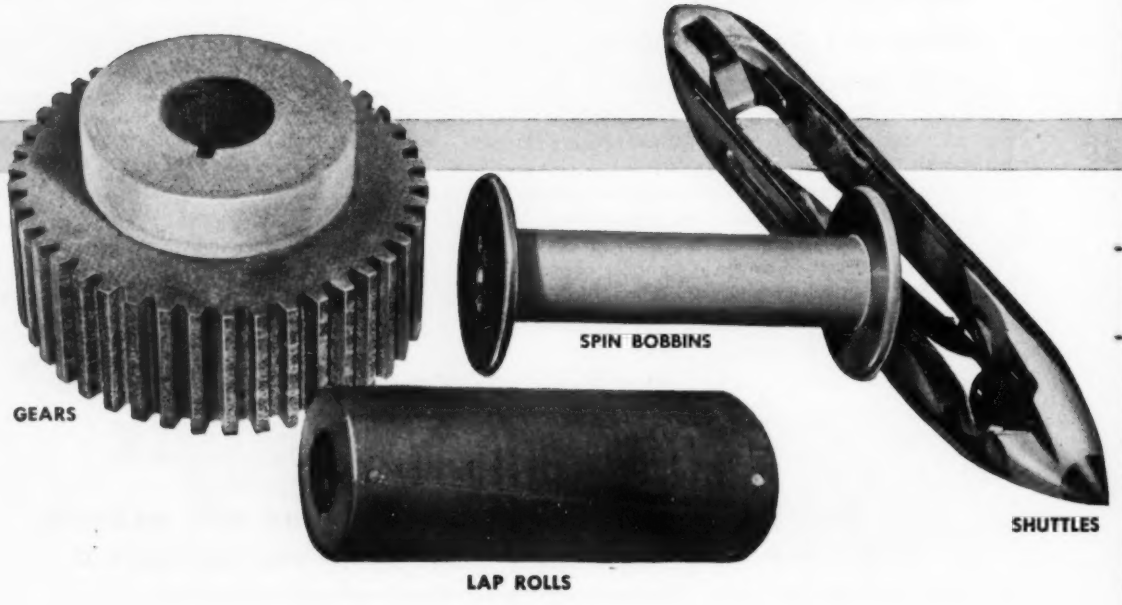
here's why... MORE and MORE mills are turning to micarta®...



because of these qualities . . .

Saves Weight, weighs half as much as aluminum.
Resists Compression, pound for pound greater than steel.
Resists Impact, absorbs and withstands severe shock.
Withstands Vibration, cushions repeated shock without effect.
Insulates like mica but greater flexibility.
Resists Corrosion, not affected by acids, oils, fumes.
Resists Heat and Cold from –112°F to 212°F.
Resists Moisture, in fact, water is its best lubricant.
Wears Slowly, Evenly, in many cases more slowly than metal.
Reduces Noise, absorbs vibrations, deadens noise.
Fabricates Easily, machined or punched with ordinary tools.

because of these flexibilities . . .

Laminated MICARTA includes standard structural shapes: plates, sheets, angles, channels, rods, tubes and zees. Occasionally this class includes simple molded shapes.

Molded MICARTA is the choice for complicated shapes, large production quantities of either simple or complicated shapes, or for certain properties better obtainable in form molding.

because MICARTA is basic

MICARTA is a tough and resilient basic material that welcomes comparison with other basic materials. This versatile plastic outlasts wood and metal in many punishing applications. Investigate MICARTA and you'll find it the economical solution to tough production problems.

YOU CAN BE SURE... IF IT'S
Westinghouse
micarta

for more information on how MICARTA can help solve your production problems, and give you advantages no metal can give you, please fill out the coupon below. A MICARTA representative will then call on you personally.

mail it today!

Westinghouse Electric Corporation
MICARTA Division, Trafford, Pa.
Attention: L. A. Pedley

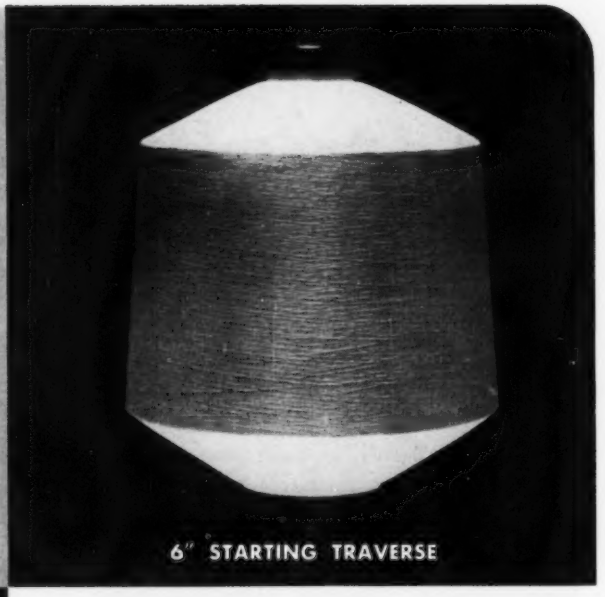
Sir: (Please Check One)

☐ Please have your representative call
☐ Please send me the complete facts on MICARTA

Name_____ Company_____
Address_____
City_____ Zone____ State_____

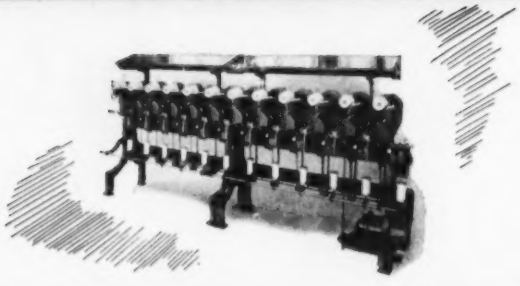
L-06501-A

THE LONG AND THE SHORT OF IT



6" STARTING TRAVERSE

5" STARTING TRAVERSE



WOUND ON SAME MACHINE WITH SAME CAM

WITH PINEAPPLE CONE ATTACHMENT

It's the "long" of it, but not quite the "short", for a 4" starting traverse is obtainable with the same cam (5"), if only small diameter cones are required.

The Foster Model 75 is also flexible as to cone densities obtainable—anything from 40 to 70 by Durometer reading, simply by adjusting tension and pressure devices.

Other features include a slow starting device to prevent yarn strain — total enclosure of lubricated parts to prevent yarn soilage—and ball bearings on spindle and drive shaft. This standard Model 75 cone also has a convex base which prevents "nip-i-tis" and sluffing.

Send for Bulletin A-92

FOSTER MACHINE CO.

WESTFIELD, MASSACHUSETTS

SOUTHERN OFFICE—JOHNSTON BLDG., CHARLOTTE, N. C.
CANADIAN REPRESENTATIVE—ROSS WHITEHEAD & CO., LTD., 1475 MOUNTAIN ST., MONTREAL, QUEBEC;
EUROPEAN REPRESENTATIVE: MUSCHAMP TAYLOR LTD., ASHTON-UNDER-LYNE, ENGLAND

FOSTER MODEL 75

FOR WINDING NYLON, RAYON, SILK AND COTTON THREAD YARNS

WHY ALGOSOLS

AN EASY ROAD TO VAT FASTNESS

ALGOSOLS are water soluble esters of vat dyes. They produce the same brilliant shades and have the same fastness properties as the parent vat dyestuffs from which they are derived. On cotton and rayon they are more level dyeing and have better penetration than ordinary vats. Prints are smoother and clearer than normally applied vat dyestuffs. On wool Algosols have superior light and wash fastness without impairment to the quality of the wool. The method of applying Algosols is simple and inexpensive.

COTTON

Mercerized cotton piece goods of constructions otherwise difficult to color, have outstanding smoothness and penetration when dyed with Algosols. The shades of colored yarns used for cross-dyed effects in striped shirtings, etc. are not affected when over-dyed with Algosols. Mercerized and other types of cotton yarn dyed in package dyeing equipment are uniform, evenly colored from outside to center and free from crossovers.

WOOL

Suitings dyed with Algosols have excellent fastness properties even in light shades. Blankets and knitting yarns have outstanding fastness to light and washing. Algosols are recommended for dyeing slubbing and yarns in circulating machines. Shrink-proofed wool dyed with Algosols has excellent fastness to light and repeated washings. Wool can be dyed with Algosols without impairment to the quality of the wool.

RAYON

Rayon piece goods composed of filament, spun rayon or filament-spun rayon yarn when dyed by the continuous method or on the jig have solid, clear shades and excellent fastness. Rayon skeins are easily dyed on the 'Cascade' type machine. Algosols are excellently suited for dyeing packages and cakes in pressure dyeing equipment.

PRINTING

In roller, screen and resist printing prints are smoother and colors clearer than the normally applied vat dyestuffs from which they are derived. Algosols have excellent light and wash fastness and do not crock. Blotch printed drapery fabrics have smooth grounds with excellent fastness to light and washing. Algosols are ideal companion colors for Rapidogens and Fast Color Salts.

MIXED FIBERS

Suitings and dress goods of spun rayon and wool blends dyed in solid shades meet all fastness requirements. Special effects can be obtained on cotton-wool and rayon-wool mixtures by dyeing the wool and leaving the cellulosic fibers undyed or on viscose-acetate blends the viscose can be dyed fast color and the acetate tinted to yield two-tone effects.

COST

The simplicity of application, saving in time, lower cost of chemicals, superior dyeing and printing results offset any increase in dye cost over ordinary vats in light and medium shades. Not infrequently Algosols prove cheaper in light shades.

✓ **DELIVERIES** Stocks are carried in warehouses located throughout the country.

gdc

Technical information, product samples and the service of a highly trained technical staff are yours for the asking.

GENERAL DYESTUFF CORPORATION

435 HUDSON STREET • NEW YORK 14, NEW YORK

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L. F. Dommerich & Co., Inc.

Executive and General Offices

271 MADISON AVENUE

NEW YORK 16, N. Y.

Telephone: Murray Hill 3-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

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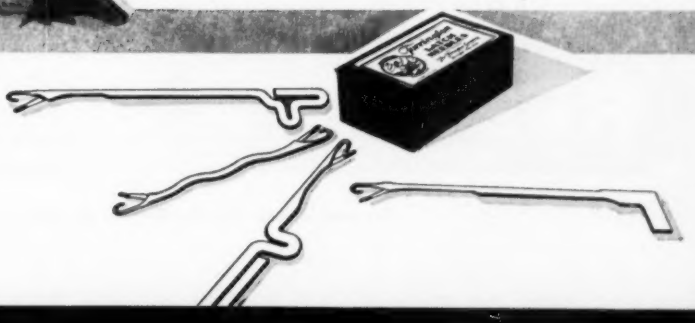
GOOD KNITTING DEMANDS GOOD NEEDLE SERVICE...

FOR FULL COOPERATION ON NEEDLE PROBLEMS ASK

TORRINGTON

Your Torrington representative is equipped to give you expert cooperation in solving problems of needle inventory or stock control . . . and in systematizing your needle purchases. He can frequently make recommendations that cut costs or improve efficiency. His experience is yours for the asking. Why not give him a call—at no obligation.



THE TORRINGTON COMPANY
Torrington, Conn., U. S. A. • Established 1866
Branches: New York · Philadelphia · Chicago · Boston
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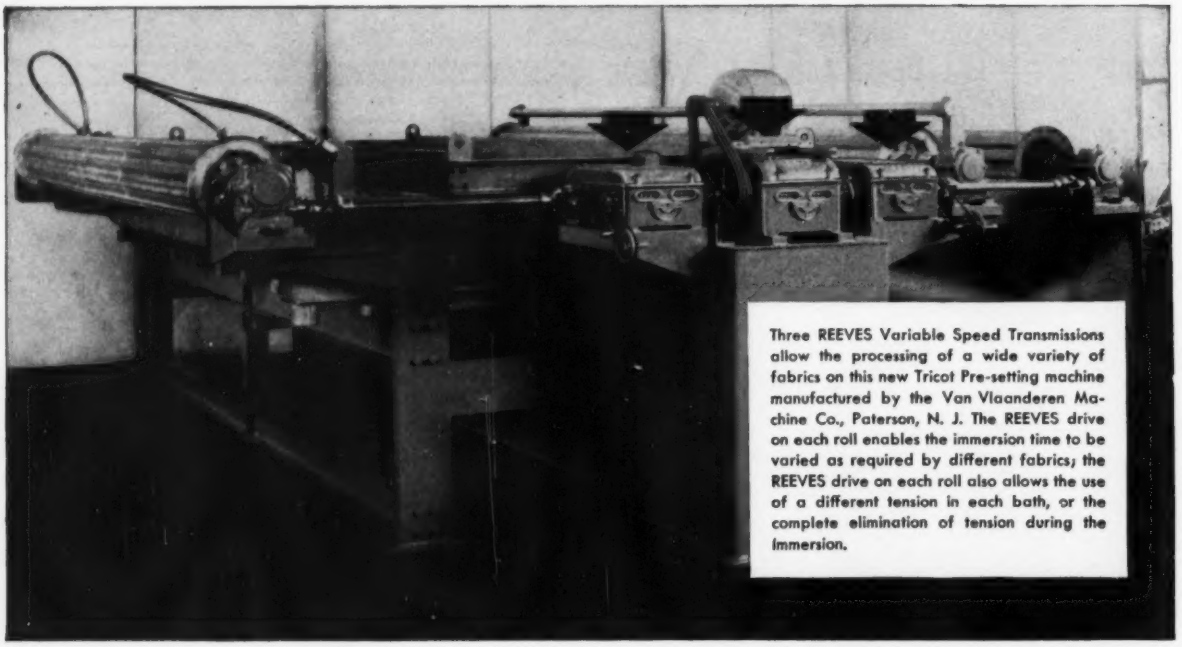
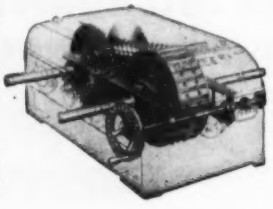
Pacific Coast Representative: E. G. Paules,
1762 West Vernon Ave., Los Angeles 37, Calif.
Broadgate House, 7-10 Eldon St., London E. C. 2, England



Three REEVES Variable Speed Transmissions allow the processing of a wide variety of fabrics on this new Tricot Pre-setting machine manufactured by the Van Vlaanderen Machine Co., Paterson, N. J. The REEVES drive on each roll enables the immersion time to be varied as required by different fabrics; the REEVES drive on each roll also allows the use of a different tension in each bath, or the complete elimination of tension during the immersion.

REEVES Variable Speed Transmission

Operating Principle



REEVES Variable Speed Transmission embodies the proved operating principle of a V-belt driving between two pairs of cone-shaped discs, mounted on parallel shafts and adjustable to form an infinite number of driving and driven diameters. One shaft receives power at constant speed from motor, line shaft, etc. Other shaft delivers power at infinitely variable speeds to driven machine. Each speed setting is held without fluctuation. Operation is practically noiseless.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

Recognized leader in the specialized field of speed control engineering

accurate • variable **REEVES** *Speed Control*

The textile industry's most widely used unit for adjusting machine speeds here's why:

1 Incorporates the REEVES operating principle—proved in 300,000 installations—which assures *accurate, positive* delivery of any desired speed within the entire speed range, without stopping the machine.

2 Makes "changeovers" easier—utilizes the machine's *full* capacity—by providing the *right* speed—with the turn of handwheel or touch of button—for every operation and every operator, under every changing condition.

3 Wide choice of vertical and horizontal models—capacities up to 87 hp; in speed ratios as great as 16 to 1; manual, electric, hydraulic or completely automatic controls; suitable for mounting in any position.

4 Easily installed on your machines. Ruggedly constructed with few moving parts subject to wear . . . requires no special tools or training to maintain.

Profit from REEVES Speed Control in your mill—*see immediate results.* Send for full details on REEVES Speed Control—ask for catalog No. W74b-G.

Proved in MILL AFTER MILL AFTER MILL–

Nopco* Balanced-performance Wool and Worsted Aids mean stronger, more even yarns

Nopco lubricants for wool and worsted yarns and blends containing synthetics are proving without equal in mills around the country. These outstanding textile chemicals always assure:

balanced fiber lubrication • fiber to fiber cohesion • fiber to metal lubricity excellent antistatic control

You'll cut waste and promote economies all along the line by putting one or more of these balanced performers to work for you:

NOPCO FUA—a self-fulling, self-scouring *wool* lubricant that acts as an oil on the fibers and like a soap in wet finishing.

NOPCO 1656-R—a specially developed *worsted* oil. Permits static-free running even under the most difficult conditions.

NOPCO 2203—an outstanding *wool* oil. Self-emulsifiable in water. Unusual spreading power. Scours freely.

NOPCO 1056-C—a low cost *wool* lubricant with "built-in" features of antistatic control, ready scourability, and freedom from yellowing.

NOPCO CP—a time-tested replacement for olive oil in the processing of *wool* and *worsted* yarns. Combines spreading power with correct drag. (Also available in water-soluble form as Nopco CP Soluble.)

Here are processing aids that help step up production . . . increase profits. Our specialists will gladly work closely with you—in your own mill, if you wish—to make sure you obtain the best possible results.

Ask your Nopco representative to give you a copy of this time-saving chart for preparing wool emulsions—and also Nopco's new data on wool, worsted, and tow-to-top converting oils.

TO PREPARE 50 GALLONS OF EMULSION										
For a ratio of one part oil	1	1	1	1	1	1	1	1	1	1
to these parts H O	1	2	3	4	5	6	7	8	9	10
Weigh these pounds of oil	208	138	104	83	69.2	59.3	51.5	46.2	41.5	37.8
Measure these gallons of H O	25	33.3	37.5	40	41.7	42.9	43.8	44.4	45	45.4
Resultant percentage emulsion	50	33.3	25	20	16.7	14.3	12.5	11.1	10	9.1
Each gallon of this emulsion added to 100 lbs. stock leaves this per cent oil on stock	4.2	2.8	2.1	1.7	1.4	1.2	1.0	0.92	0.83	0.75

*Reg. U.S. Pat. Off.

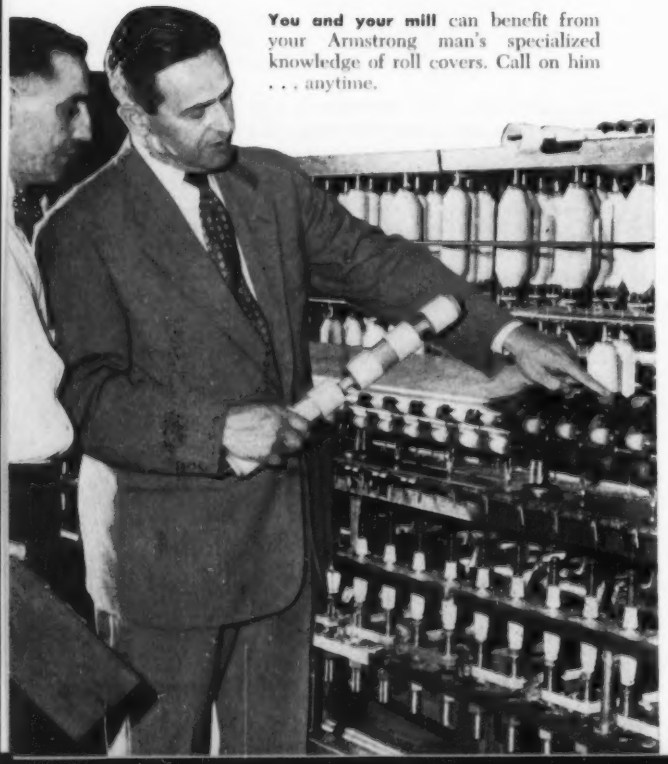
NOPCO
EVOLVED THRU RESEARCH

NOPCO
CHEMICAL COMPANY Harrison, N. J.

Branches: Boston • Chicago • Cedartown, Ga. • Richmond, Calif.

When you plan to start spinning BLENDS

Call your Armstrong man—he can help



You and your mill can benefit from your Armstrong man's specialized knowledge of roll covers. Call on him . . . anytime.

Blends of natural and synthetic fibers can be tricky to spin. Sometimes even a small variation in percentage composition is enough to cause a big change in spinning characteristics.

If you're going to spin a new, unfamiliar blend, a call to your Armstrong man *before* you make the change may save you much time and money. As your consultant on spinning and roll covering, he can help make sure you have the right cots for the new blend.

Often you'll find he's had experience with a blend similar to yours. If not, he'll gladly work with you to determine which type of cover you should use.

Your Armstrong representative can help you with almost any problem involving roll covers. His years of specialized training and experience provide answers that can be depended on. And no matter what kind

ARMSTRONG'S

you get the right roll cover for any blend

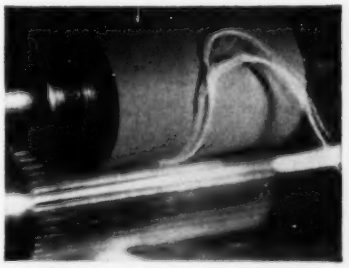
of spinning you do, your Armstrong man has a roll cover that will give you clean, even yarn at low cost.

In addition to cork, he has a complete line of lap-resistant Accotex® Cots. Lap resistance is built right into Accotex Cots by adding a patented electrolyte which neutralizes the electrical attraction between cot and fiber. Accotex Covers are long wearing, too—with a minimum of re-buffing, they'll give up to six years' continuous service. Every formulation is made in a wide range of firmness to provide proper cushion for different kinds of work.

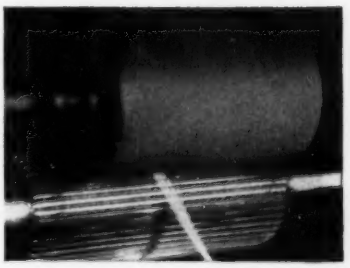
For samples of any Armstrong textile product, get in touch with your Armstrong man or write direct to Armstrong Cork Company, Textile Products Department, 6505 Dauphin Street, Lancaster, Penna. Accotex Cots are available for export.

ACCOTEX COTS

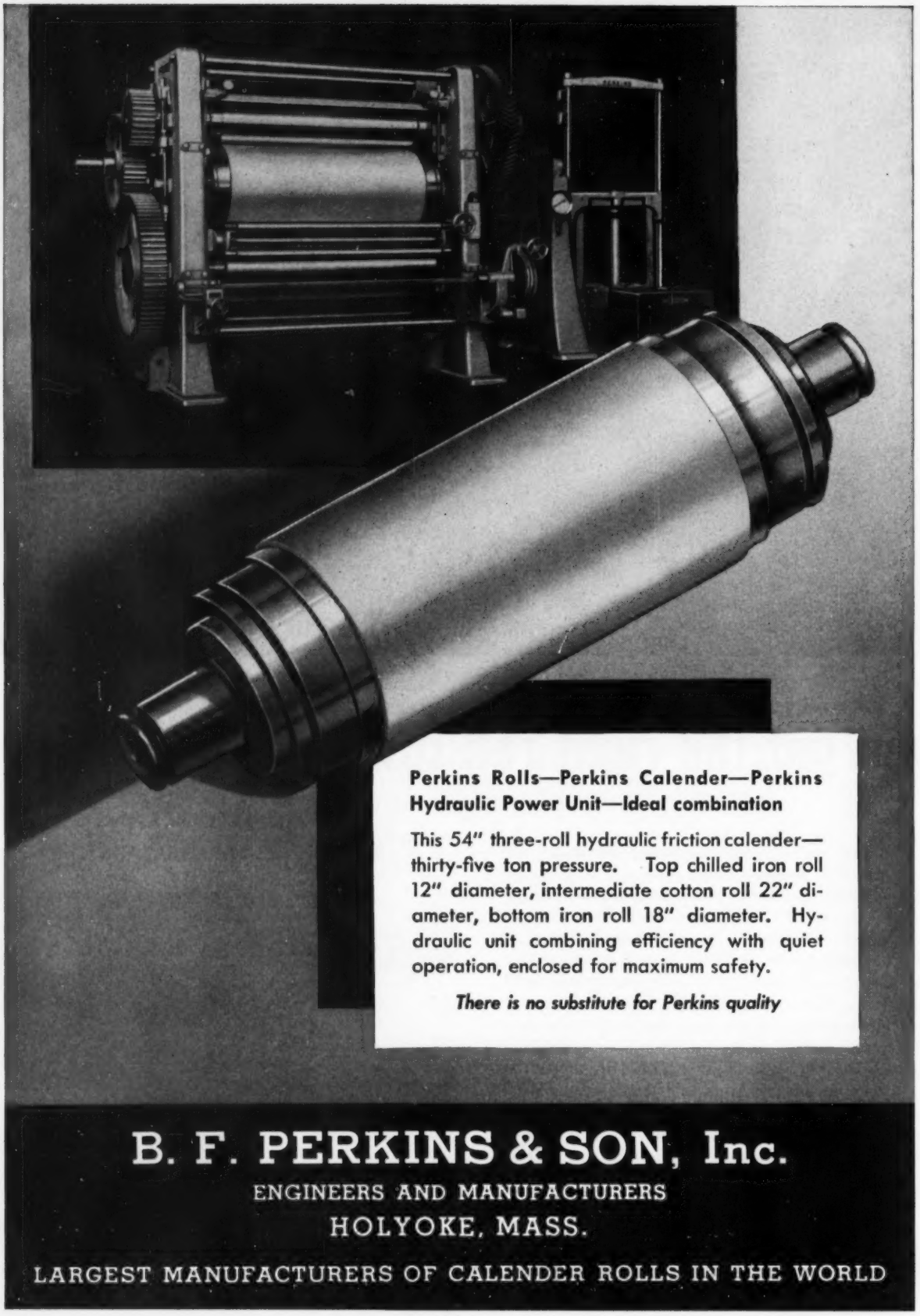
WHEN THE YARN BREAKS . . .



This Cot Laps. Moisture layers on fiber and cot contain mutually attracting electrical charges. On most cots, this is chief cause of lapping.



This Cot Resists Lapping. Certain electrolytes put in Accotex Covers neutralize electric charges in moisture layer on cot. This eliminates the inherent attraction between the cot and fiber.



Perkins Rolls—Perkins Calender—Perkins Hydraulic Power Unit—Ideal combination

This 54" three-roll hydraulic friction calender—thirty-five ton pressure. Top chilled iron roll 12" diameter, intermediate cotton roll 22" diameter, bottom iron roll 18" diameter. Hydraulic unit combining efficiency with quiet operation, enclosed for maximum safety.

There is no substitute for Perkins quality

B. F. PERKINS & SON, Inc.

ENGINEERS AND MANUFACTURERS

HOLYOKE, MASS.

LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

WE'RE AT HOME...

OUT ON A LIMB!

As part of our Wool Oil Service we Guarantee you Definite Benefits in Writing!

We're willing to go out on a limb—guarantee you definite benefits in writing—because the wool oil service we provide, *the most comprehensive in the industry,* has proved so completely successful wherever used. Here's what we offer:

Scientific Analysis of your mill operations by a Socony-Vacuum engineer.

Complete Engineering Report with recommendations of correct wool oils.

Proved Products that meet desired degrees of scourability and discoloration resistance.

Laboratory Service where tests are made of mill samples to control performance on the job.

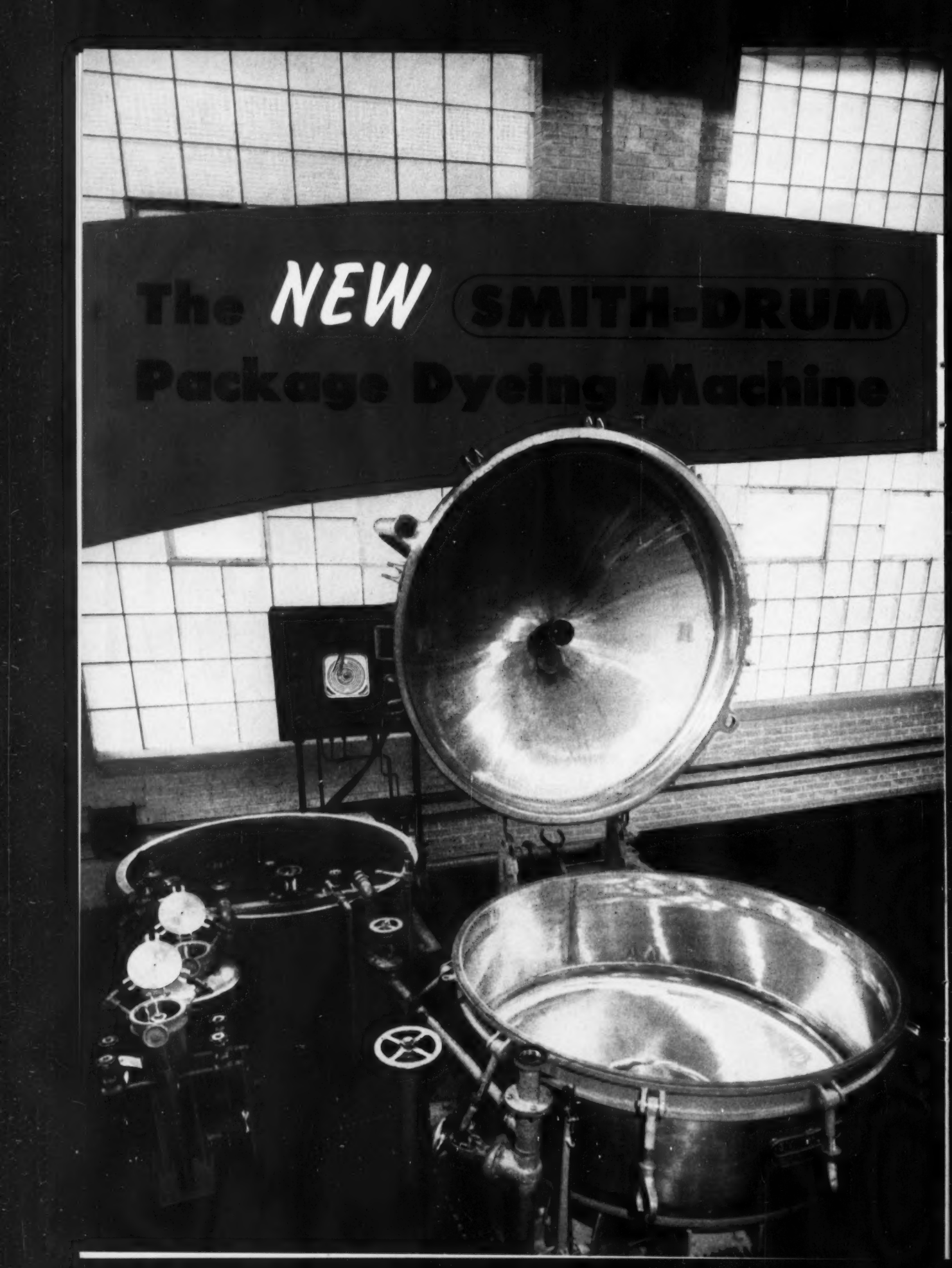
Progress Reports to show efficiency of fiber lubrication, recommend further improvements.

Why not take advantage of this exclusive wool oil service to improve *your* operations?

SOCONY-VACUUM
...process products

Process Products
SOCONY-VACUUM

SOCONY-VACUUM OIL CO., INC., 26 Broadway, New York 4, N.Y. and Affiliates: MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP.


The NEW SMITH-DRUM
Package Dyeing Machine

Provides an EXTRA Margin of Safety for ULTRA High Temperature Dyeing

This all-new Smith-Drum Machine is designed and built for temperatures up to not just 250° F., . . . not just 300° F., *but for working temperatures up to 325° F.!* This is adequate not only for the top temperatures used today . . . but provides an *extra* margin of safety to meet the *ultra* high temperatures which *may* be used in the years to come. Back in 1939, when 205° F. was the maximum temperature used or even contemplated, Smith-Drum machines were built with an extra margin of safety up to 250° F. As a result, users of these Smith-Drum machines were *prepared* for high temperature dyeing, without extra expense.

NOW . . . every purchaser of this new SMITH-DRUM Machine will be fully prepared to meet *future* developments in high temperature dyeing. At the same time the other new "plus" features shown below make it a far more efficient machine for today's normal dyeing requirements.

Abolishes Expensive Shut-Downs to Sample . . . to Make "Adds"

Among the many *plus features* built into this new SMITH-DRUM Machine are two which abolish the necessity for costly shut-downs. First . . . a high pressure sample package dye kier permits sampling under actual operating conditions without shutting down the machine. Second . . . a high pressure dye feed kier provides for making "adds" without cooling and shutting down. Carriers can be furnished to accommodate packages, cakes, tops or raw stock . . . For more complete details, write:

SMITH, DRUM & COMPANY
432 W. Allegheny Ave., Philadelphia 33, Pa.

Southern Sales Representatives:
PARROTT AND BALLENTINE
South Carolina National Bank Bldg., Greenville, S. C.

Check these SMITH-DRUM "PLUS" FEATURES

1. Increased Liquor Flow to Meet All Dyeing Requirements.
2. Working Pressure: 81 p.s.i.
3. Working Temperature: 325°F.
4. Heat Exchanger for Rapid Heating and Cooling.
5. All-Stainless Steel Drain Valves.
6. High Pressure Dye Feed Kier . . . no shut-down to make "adds".
7. High Pressure Sample Package Dye Kier . . . no shut-down for sampling.
8. Standard Control Panel . . . Range up to 325°F.
9. Positive Shut-Off Expansion Tank Drain Valve.
10. All-Stainless Steel Supporting Pads.
11. Perfectly Balanced Covers for Ease and Safety of Operation.

(Photo courtesy of Tennessee Eastman Company)

Loom-finished fabrics? Durable size!

To avoid water-spotting . . . use new STYMER LF

Today beauty meets economy right on the loom! By weaving solution-dyed acetate yarns into the new "ready-for-market" fabrics, mills can now effect important processing economies *and* give the consumer a product that is attractive, color-fast and easy to maintain.

With loom-finishing, however, appeared the need for a *durable size*—one which would lick the problems raised by leaving a water-soluble agent in the finished fabric—and Monsanto developed Stymer LF to meet this need. Sizing with Stymer LF makes it possible to produce loom-finished fabrics that *do not water-spot*—goods with a crisp, marketable hand that will not become raggy after dry cleaning.

These qualities make Stymer LF, for loom-finishing, a worthy companion to Stymer S, used industry-wide for conventional acetate sizing. For complete details on how Stymer LF will enable you to take *full advantage* of the loom-finishing process, get in touch with:

MONSANTO CHEMICAL COMPANY, Textile Chemicals Department, Boston 49, Mass. Stymer: Reg. U. S. Pat. Off.

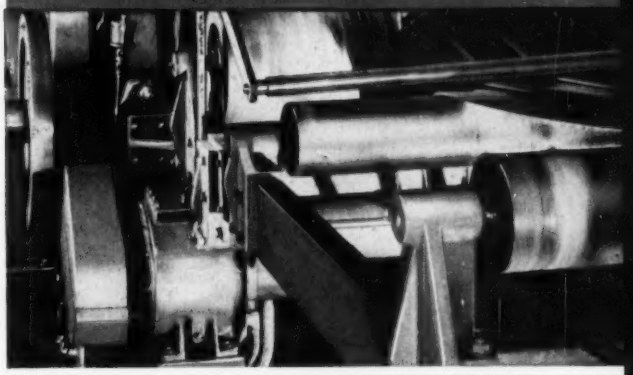
MONSANTO®

SERVING INDUSTRY . . . WHICH SERVES MANKIND

Saves Time, Money, Material

ON CHICAGO CARTON COMPANY LAMINATING MACHINE

AND CUT-OFF



Oilgear drive installed in 1934 operates 16 hours daily at low cost. Gives maximum production on all stocks with little spoilage or non-productive time

A laminating machine and a cut-off in the plant of the Chicago Carton Company are driven in synchronism by Oilgear Fluid Power Equipment installed in 1934. A trip to the plant reveals today the compact, sturdy Oilgear equipment on the lower floor performing quietly, efficiently and continuously 16 hours a day in the necessarily humid atmosphere. Maintenance records indicate a total expenditure of $93.21 during the 16 years for service and parts, less than $6.00 a year. Because of the full flexible speed range and easy controllability of the Oilgear drives, the laminating machine is operated at speeds that best fit the type of board being processed and the cut-off drive follows in synchronism to cut stock into uniform lengths.

Another Oilgear feature important here is the unusual speed with which the laminating machine drive and cut-off drive can be started and stopped. This feature of Oilgear smooth, high speed acceleration and quick hydro-dynamic braking reduces non-productive time and cuts spoilage of sheets to a bare minimum.

On the basis of the 16 year performance of Oilgear, the Chicago Carton Company recently installed another Oilgear drive on a new 125 hp installation.

Time after time, Oilgear demonstrates its superiority and dependability on variable speed drives. Oilgear Fluid Power has many advantages. Investigate them now. THE OILGEAR COMPANY, 1577 W. Pierce St., Milwaukee 4, Wis.

UPPER—Oilgear 40 hp Variable Speed Drive with electric pilot motor remote control and oil reservoir base.

LOWER—Oilgear 7½ hp Variable Speed Drive with automatic control to synchronize cutter speed with speed of laminating machine drive.

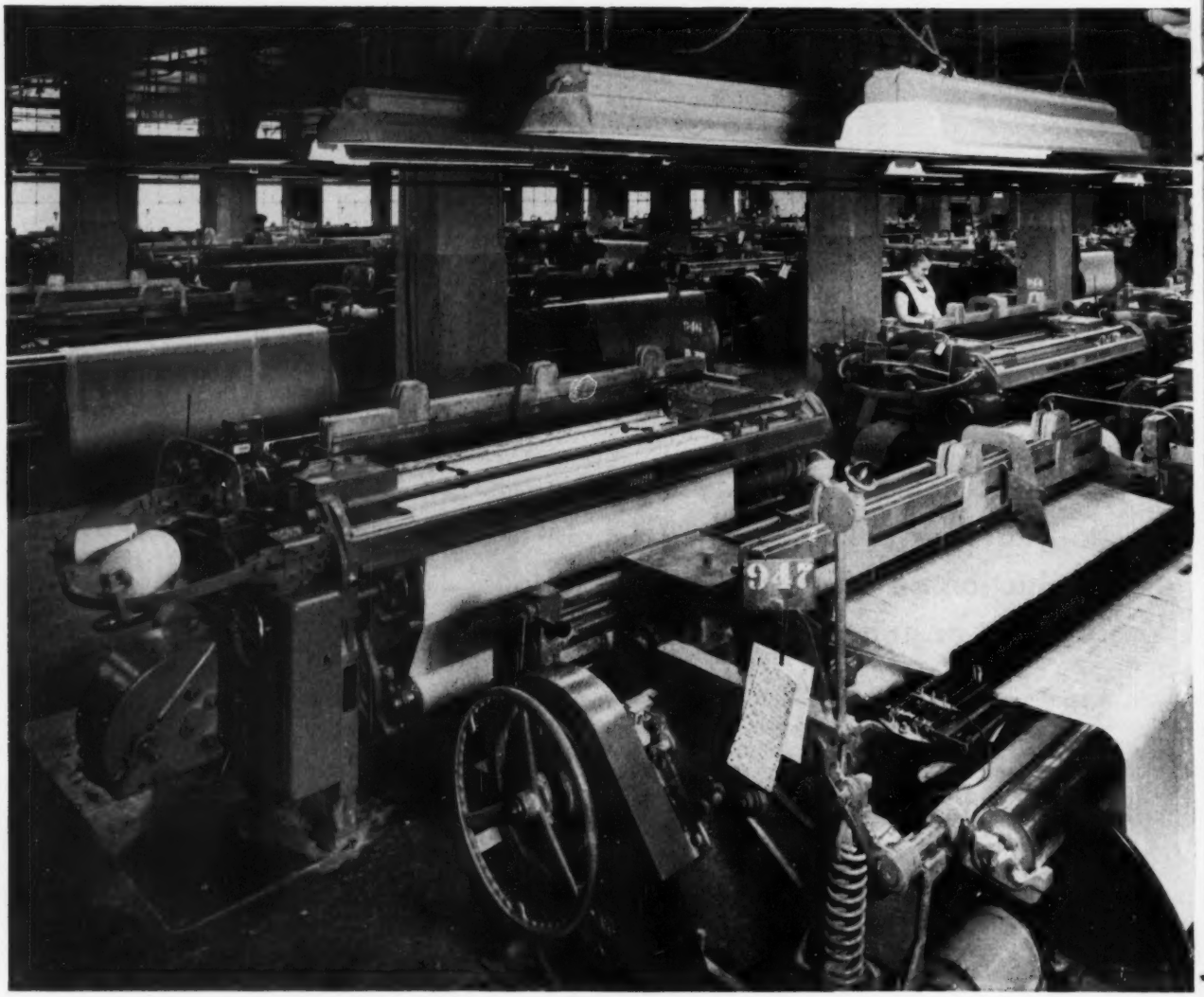
Oilgear

PIONEERS IN FLUID POWER

PUMPS, TRANSMISSIONS, CYLINDERS AND VALVES

HERE'S WHAT A LEADING

Warner & Swasey-Sulzer



In this mill over a hundred Warner & Swasey-Sulzer Weaving Machines speed production of worsteds and woolens. Note how the low construction of the machines gives an unobstructed view of the entire weave room.

BRANCH OFFICES

61 Rivulet Street, North Uxbridge, Mass. • 6910 Market Street, Philadelphia, Pa.
Candler Building, Atlanta, Georgia • 1820 Browning Ave., Charlotte, N. C.

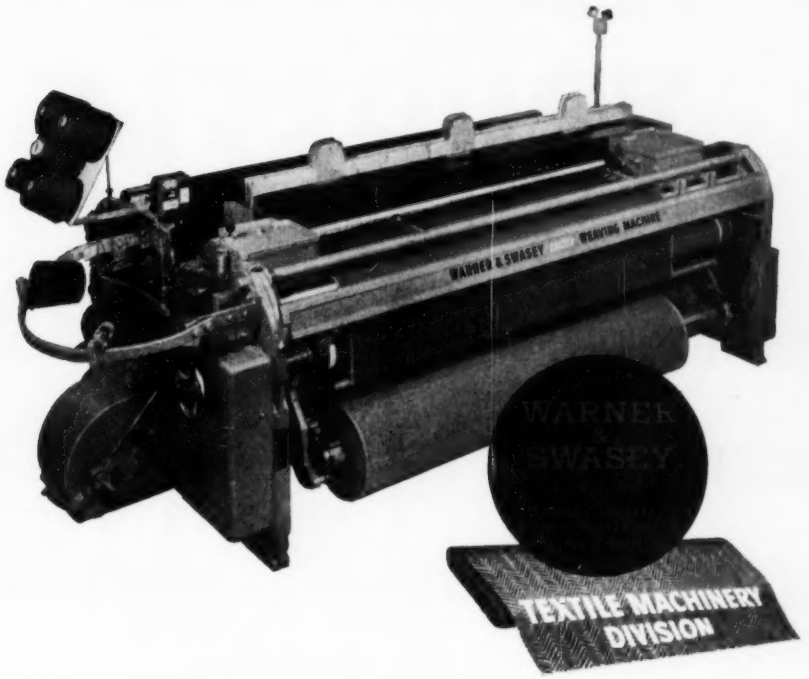
YOU CAN PRODUCE IT BETTER, FASTER FOR LESS WITH WARNER & SWASEY

MILL SAYS ABOUT THEIR

Weaving Machines

- **"Production 1.8 to 2 times as much as from our previous looms."**
- **"Much less downtime from warp-end breaks."**
- **"Mending has been cut about 50%. We've completely eliminated filling kinks and double picks, wrong lifts and harness skips."**
- **"Quality is about 50% better."**
- **"Less waste—filling waste is practically eliminated."**
- **"Maintenance costs down . . . lubrication simplified."**
- **"Operators like machines very much. We'd have trouble taking weavers off the new machines."**
- **"Machines reduce over-all weaving cost."**

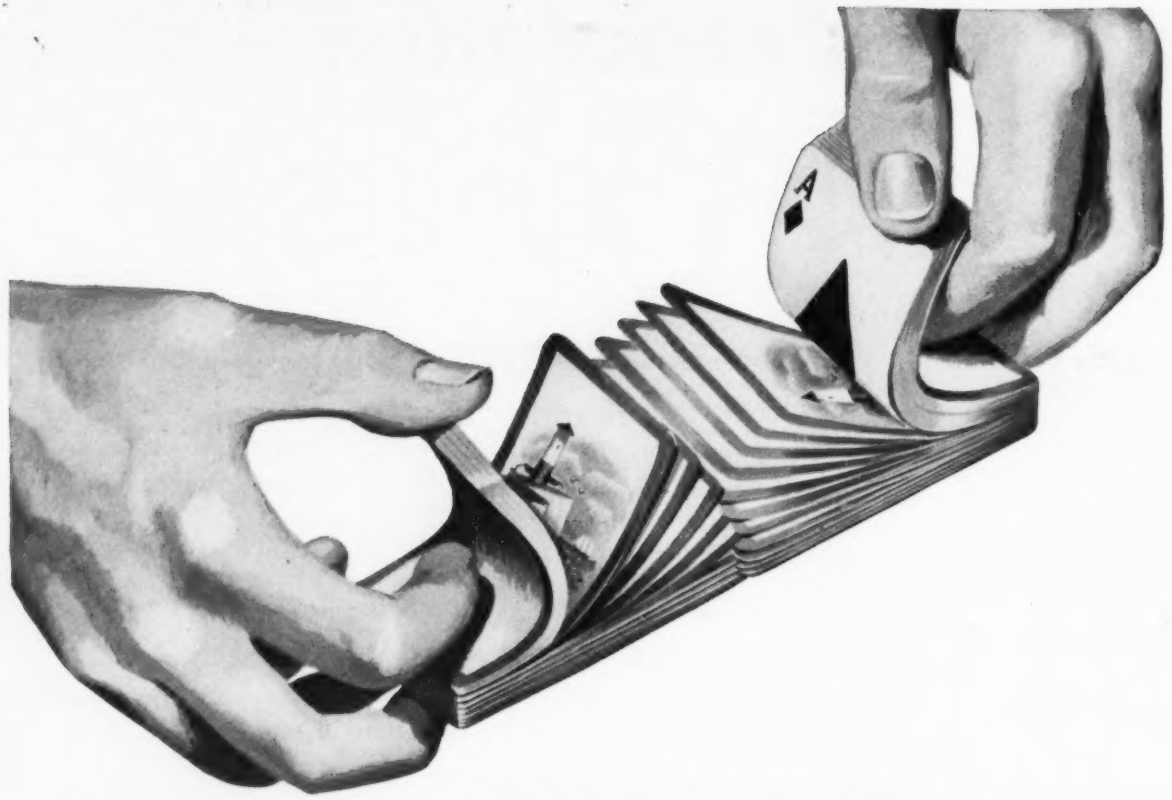
Weaving worsteds, woolens, spun synthetics or blends, these revolutionary new machines can speed *your* production, improve quality of fabrics, and cut your costs. Call in your nearest Warner & Swasey Field Representative for the full details.



MODELS

M-2820 80" reed
M-2860 95" reed
M-2960 110" reed

MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY



WILL YOU DEAL YOURSELF IN?

NATIONWIDE CELANESE ADVERTISING FOR CELAPERM*

ACETATE YARN ROLLS UP VOLUME FOR INDIVIDUAL MAKERS. WILL YOU DEAL YOURSELF IN?

Without question, Celaperm—Celanese' *perfected* solution-dyed acetate yarn—offers unparalleled styling opportunities and mill efficiencies.

For example—with Celaperm you enjoy color fidelity, no matter how large an order you place. You can achieve plain or iridescent effects with Celaperm. You can by-pass difficult dyeing operations and strikingly combine Celaperm with black or white yarns. You can combine Celaperm with two other fibers, that can be cross-dyed for brilliant fashion. Indeed, with Celaperm you can develop *loom-finished* fabrics.

You can do all these things with Celaperm—but what do they add up to? In a word—*promotion*—the most significant color promotion in fabric and fashion today.

That is why Celanese is spreading the good word—CELAPERM—through color pages and spreads in the nation's leading magazines: Life, Good Housekeeping, Vogue and Harper's Bazaar, House & Garden, House Beautiful, Mademoiselle—advertising backed by a great name—*Celanese*—synonymous with textile leadership. That is why Celanese advertising is conceived in terms of merchandise and store promotions that will not only drive home our Celaperm name—but *move* home your Celaperm goods.

Here is an exciting opportunity for alert mills (*and* makers *and* merchants) who believe that fashion moves forward with color beauty that lasts for the life of the fabric—and that sales thrust ahead with dramatic *merchandise* advertising. Here is *your* opportunity to work with Celanese and *Celaperm* and so create a better future for all.

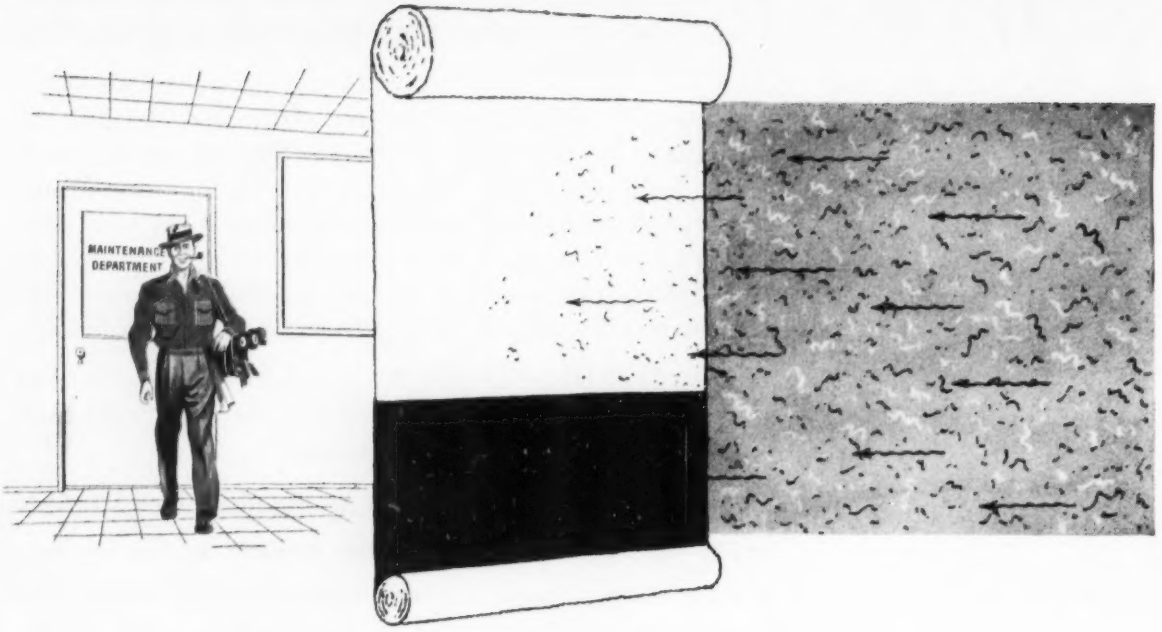
Will you count yourself in? Write: Merchandising Director, Celanese Corporation, 180 Madison Avenue, New York 16, N. Y. and see how you can participate in the big national promotions now being planned.

*Reg. U. S. Pat. Off.

CELAPERM*

Celanese*

ACETATE YARN WITH PERFECTED "SEALED-IN" COLOR

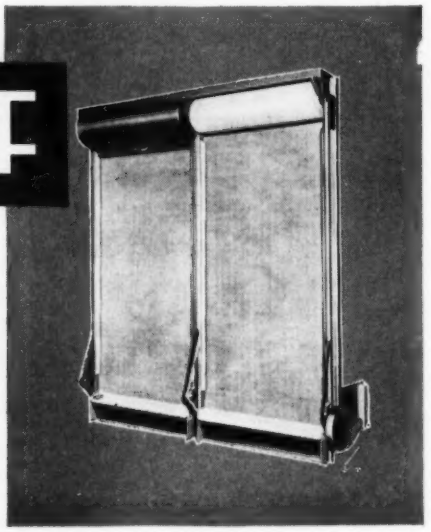


No More Lint... NO MORE OVERTIME MAINTENANCE

AUTO-AIRMAT—the "lint hungry" automatic air filter that will work 24 hours *every* day banishing lint from the recirculated air in ventilating systems. This is one of the famous family of AAF filters—and was especially designed for the job. It is the only automatic self-cleaning lint filter on the market. It soon pays for itself by beating costly week-end maintenance on lint-clogged humidifiers, washers and precipitators. The self-cleaning AUTO-AIRMAT rolls up collected lint automatically, ready for easy disposal. We invite inquiries. Please write for Experience Reports.

Expect the Best from...

American Air Filter
COMPANY, INC.
304 Central Avenue, Louisville 8, Ky.
American Air Filter of Canada, Ltd., Montreal, P. Q.



This is a photograph of the AUTO-AIRMAT . . . the only self-cleaning lint filter developed especially for textile mill service. The AUTO-AIRMAT can be installed in Double V banks to conserve space. Manual maintenance is reduced to a minimum. Here, in one complete unit, is the best answer to costly overtime maintenance that reduces profits in textile mill operation.

To replace "STAFFORD" type THREAD CUTTER
on E, K, L, O, X, XD, XK and other models

here's another item that keeps

LIVERMORE
in the LIMELIGHT

it's NEW *

. . . of simple design and construction

no more "DRAG INS"

when you install this

HFL IMPROVED THREAD CUTTER

1. **SHUTTLE-EYE ACTION**
   It cuts and holds filling *with a tight grip* at the SHUTTLE EYE!
2. **POSITIVE IN OPENING AND CLOSING**
   Never fails to operate . . . and *will not open if rebound occurs.*
3. **ALL CASTINGS MALLEABLE IRON**
   Longer service provided by overcoming parts breakage.

Can also replace "ROPER" type thread cutter by removing the present "gooseneck" and stand, and installing the HFL Improved Shuttle Feeler, Bracket, Tip, Latch Depressor and Front Box Plate.

Send for descriptive literature

HFL IMPROVED LOOM PARTS
insure minimum cost per yard of production.

HFL
IMPROVED LOOM PARTS

H. F. LIVERMORE CORPORATION

ESTABLISHED 1887

EXECUTIVE OFFICES & PLANT
BOSTON 34, MASS.

SOUTHERN DIVISION
GREENVILLE, S. C.

* Patent applied for

HYDROGEN PEROXIDE

for OXIDATION of VAT DYES on Cotton and Synthetics

CLEAN . . . FAST . . . SIMPLE

BECCO
HYDROGEN PEROXIDE AND OTHER PEROXYGEN CHEMICALS

Process details are described in our Bulletin No. 38. Please ask for it.

BUFFALO ELECTRO-CHEMICAL COMPANY, INC., Station B, Buffalo 7, N. Y.

Please send me your Bulletin No. 38 on Oxidation of Vat Dyes with Hydrogen Peroxide.

NAME_____

COMPANY_____

STREET_____

CITY_____ ZONE____ STATE_____ TW-5-53

BUFFALO ELECTRO-CHEMICAL COMPANY, Inc.

fmc DIVISION OF FOOD MACHINERY AND CHEMICAL CORPORATION

Sales Agent: BECCO SALES CORPORATION, Station B, Buffalo 7, N. Y. • Buffalo • Boston • Charlotte • Chicago • New York • Philadelphia • Vancouver, Wash.

Why your machinery and motors last longer with LINK-BELT Fluid Drive's constant

CUSHION ACTION

IF YOUR MACHINE loads are of the high inertia, repetitive shock or high starting torque type, Link-Belt's Fluid Drives can save you money.

Constant CUSHION ACTION gives you the shock absorption and overload protection you need. More—because shock load service factors can be disregarded, you can use power transmission equipment of lower horsepower.

Check the three curves below. They demonstrate three exclusive advantages of CUSHION ACTION. And for more detailed information, write for Book 2485. In it you'll find all the facts on five types of Link-Belt Fluid Drives — Electrofluid Drive, Electrofluid Gearmotor, Fluid Drive, Fluid Gear Drive and Fluid Coupling Drive.

Cutaway shows simple, rugged construction of Link-Belt Fluid Drive.

LINK-BELT COMPANY: Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa), Sydney (Australia). Offices, Factory Branch Stores and Distributors in Principal Cities.

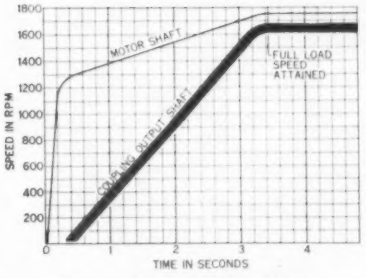
LINK-BELT

FLUID DRIVES

12,654

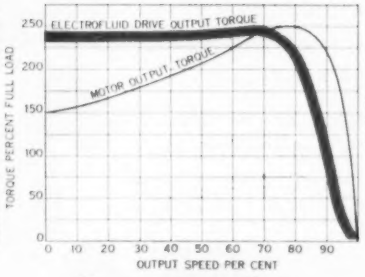
Here's proof

that LINK-BELT CUSHION ACTION offers you real savings . . .



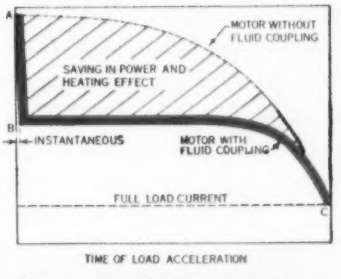
Smooth acceleration

Typical motor and coupling acceleration curves for a high-inertia load show how CUSHION ACTION smoothly and gradually accelerates the load, saving wear and tear on vital equipment.



No overmotoring

Compare the output torque of a motor with and without the fluid coupling. Because motor accelerates free of load, it reaches maximum pull-out torque that might otherwise require a special type of oversize motor.



Low starting current

As these current consumption curves show, with the fluid coupling, motor starting current drops instantaneously to less than half the starting current required by a motor without fluid coupling. Difference represents power savings, reduced heating.

 For more information, write direct or use Reader Service post card.

LET VEEDER-ROOT COUNTERS

"tend to your KNITTING"

For any type of knitting machine . . . circular, flat, tricot, underwear or outerwear . . . Veeder-Root makes the counters you need to control your production and the uniformity of your cloth-roll lengths . . . to eliminate end-of-shift weighing or "guesstimating" . . . to reduce downtime and simplify payroll make-up.

Here at the right is a Veeder-Root 2-3-4 Convertible Reset Revolution Counter, supplied with either vertical or horizontal drive, which has a wide application on modern knitting machines. Below is one of scores of Veeder-Root Counters for other applications, this one a "Dozens Counter" for tallying by inspectors in full-fashioned hosiery mills. But no matter *what* you want to count, Veeder-Root has the counters to "tend to your knitting" . . . *to your greater profit.* Write:

VEEDER-ROOT
INCORPORATED
"The Name That Counts"

HARTFORD 2, CONN. — GREENVILLE, SO. CAROLINA
Montreal, Canada; London, England;
Offices & Agents in Principal Cities

AHCOFIX* S
For Substantive Application

AHCOFIX* C
For Pad Application

Now, a range of direct dye fixation agents that covers all application methods. For superior substantivity or pad application processes. Better wash and perspiration fastness, controlled light fastness and top wet processing performance are features of the AHCOFIXES.

AHCO PRODUCTS

ARNOLD, HOFFMAN
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Plants: Charlotte, N. C., Cincinnati, Ohio, Dighton, Mass.

*Reg. Trademark

 For more information, write direct or use Reader Service post card.

Service . . . *where and when you want it*

PROMPT, experienced service is one of the most important plus values you get when you buy Honeywell instruments. An unequalled organization of trained specialists is always at your call at more than 110 offices in the United States and Canada. Offices are located in practically every large industrial city of the country . . . close to every major production center.

Trained Personnel

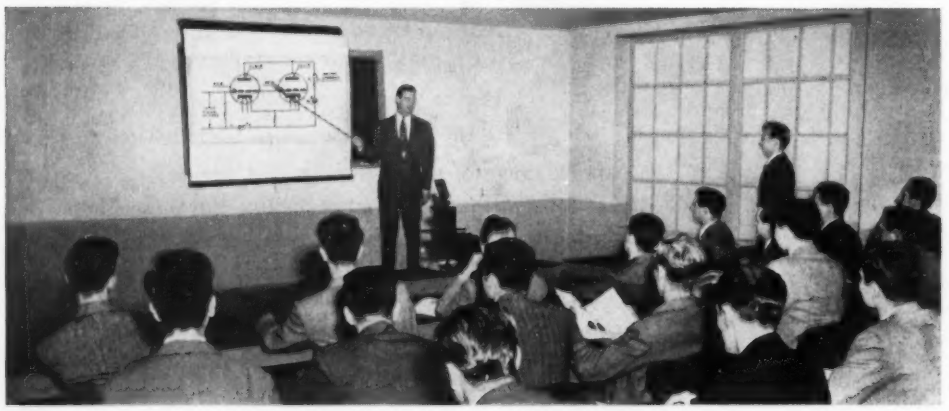
Honeywell service men are schooled not only in the theory of measurement and control, but also in the practical art of keeping good instruments in the best condition. Hand picked men begin this instrument education in an intensive training program in Honeywell factories. After graduation, they serve an apprenticeship in the field offices . . . while they learn still more about instrument maintenance from first-hand contact with plant problems. By the time a Honeywell man arrives at your plant on a call, he's a finished product worthy of the responsibility he bears, and capable of doing the kind of service job that you need . . . and that your Honeywell instruments deserve.

When trouble strikes, a wire or telephone call will bring a service man to your plant . . . often within a few hours. This assurance of prompt action means a lot to your production schedules. You'll never be left out on a limb because of delays in instrument maintenance.

Periodic Service Plan

But why wait for emergencies? Preventive medicine works on instruments, too. And the prescription is simple . . . a Periodic Service Contract, which brings a Honeywell service man to your plant at regular intervals to inspect, clean and adjust any Honeywell instruments you have. The plan is economical . . . can save you many hours of lost production time. Your nearest Honeywell office will be glad to give you full details.

Temperature control *improves*



TRAINED TO SERVE: *In Honeywell's service school, students get a thorough grounding in instrument theory and practice. After graduation, they become part of the most extensive organization of its kind in the world . . . ready to serve you competently and promptly, whenever and wherever you need them.*

ACCURATE HEAT SETTING *of nylon cloth is accomplished by direct control of cloth temperature, by means of an* ***ElectroniK*** *controller.* ***Radiamatic*** *element (right) sights through the tenter housing at the cloth . . . detects temperature without touching the fabric.*

with *Radiamatic* pyrometers *uniformity of nylon heat-setting*

AN improved method of controlling nylon heat-setting temperature—by means of *Radiamatic* pyrometers—is bringing marked benefits to an increasing number of mills.

The unique feature of this system is that it is based on the temperature of the cloth itself. The closer control thus afforded makes heat-setting readily reproducible and thoroughly uniform on every production lot. The instant that cloth temperature deviates from the specified value, the *Radiamatic* sensing element detects the change . . . an *ElectroniK* instrument records it and immediately starts control action to change heat input accordingly. Temperature has little chance to rise to the point where cloth is damaged, or to fall low enough to cause undersetting.

This greater accuracy of control—essential to achieving the close tolerances demanded by synthetic fibers—is especially important in modern high-speed setting ovens, where the cloth is in the heating zone only a few seconds. The speed and precision of the *Radiamatic* element and its *ElectroniK* controller provide the high standard of accuracy and speed of response that the application requires.

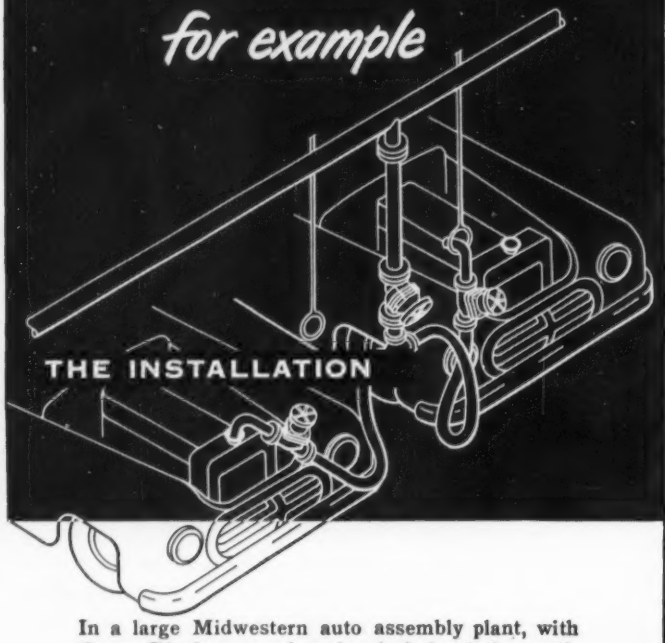
Your local Honeywell engineering representative will be glad to discuss applications of this modern instrumentation in your mill. Call him today . . . he is as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4509 Wayne Ave., Philadelphia 44, Pa.

● **REFERENCE DATA: Write for Catalog 9300, "Radiamatic Pyrometers."**

MINNEAPOLIS
Honeywell
BROWN INSTRUMENTS
First in Controls

How Valve Life Changed from Days to Months ...on Crystalline Liquids, for example



In a large Midwestern auto assembly plant, with Crane Diaphragm valves in alcohol solution anti-freeze fill lines to automobile radiators.

VALVE SERVICE RATINGS

SUITABILITY:	Doing the job O.K.
FEATURES:	Packless; no leakage around stem
MAINTENANCE COST:	None
SERVICE LIFE:	Now 25 times longer than any valve used
OPERATING RESULTS:	Damage to production stopped
PRICE:	O.K. no premium
AVAILABILITY:	Regular Crane Catalog item. No. 1610

THE CASE HISTORY

None of the many conventional valves nor the plug cocks tried in this service lasted more than a week—about 2,000 operations.

The crystals present in anti-freeze would build up on seating surfaces and in the exposed valve stem threads. The valves leaked and were hard to operate. To the excessive maintenance needed was added the high cost of frequent damage to automobile finish by anti-freeze leakage.

Now Crane Packless Diaphragm valves control the trouble. Their sealed bonnet prevents contact of fluid and working parts; their seating design isn't hindered by crystal deposits. At last report, Crane valves have given over 50,000 trouble-free operations with no maintenance, and with indefinitely longer life assured.

THE VALVE

In Crane Diaphragm valves, the diaphragm serves only to seal the bonnet, not for seating. It isn't pinched or stressed when valve is closed. Independent disc gives control of fluid even should diaphragm fail. These valves are made in a wide variety of body, diaphragm, disc-insert, and body-lining materials to handle countless corrosive, abrasive, or ordinary services. See your Crane Catalog or local Crane Representative.

THE BETTER QUALITY...BIGGER VALUE LINE...IN BRASS, STEEL, IRON

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

Whether you want one worm-gear speed reducer or a thousand, a standard drive or a unit designed to meet special problems, Cleveland can serve you better.

"Cleveland" is the standard in worm gearing

● When you specify "Clevelands—or equal," you can be confident that you are getting the finest in worm-gearing.

The uniform dependability that has distinguished Clevelands through 38 years has established "Cleveland quality" as the measure of value in worms and gears. Cleveland sets the pattern through four outstanding features:

1. *Correctness of design*—proved by years of performance.
2. *Finest of materials*—selected on the basis of long experience and research.
3. *Modern manufacturing facilities*—kept up-to-date by a policy of continuous replacement.
4. *Precision workmanship*—by machinists and other production workers, trained as craftsmen.

Cleveland offers a complete line of worm gear sets and speed reducers, including the popular fan-cooled Speedaire —to meet the needs of any machinery or equipment builder or user. Representatives in all major industrial centers are at your service. Write for our current catalog.

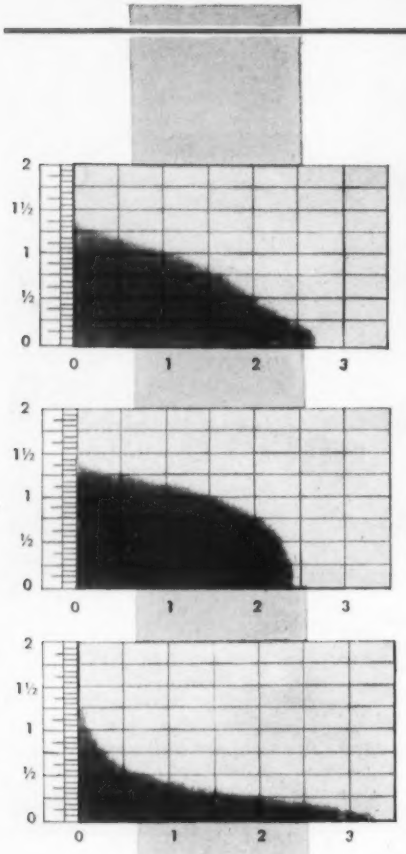
The Cleveland Worm & Gear Company, 3268 East 80th Street, Cleveland 4, Ohio.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication. In Canada: Peacock Brothers Limited.

 For more information, write direct or use Reader Service post card.

When you get down to brass tacks...

here's what a comber should do!



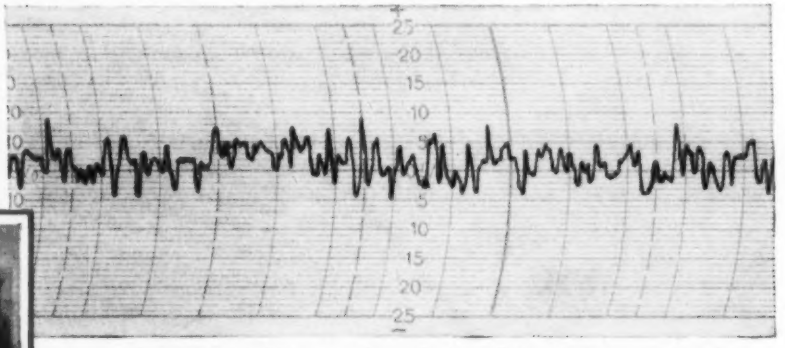
The above fiber arrays show the quality of work done by the Whitin "J" Comber. At top, ribbon lap; center, combed sliver; at bottom, noil. Note that practically all of the short fibers have been removed and only a very few long fibers combed out.

It should:

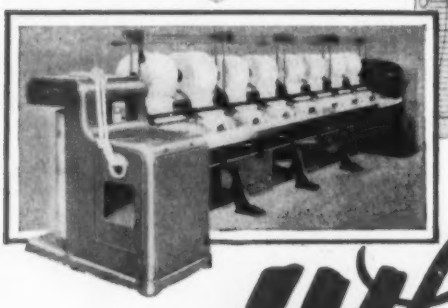
- **Produce high quality sliver with low variation.**
- **Reduce neps to the lowest possible amount. The ratio will vary from 3:1 to 6:1 depending on the staple and the amount of noil.**
- **Remove practically all of the short fibers and few or none of the long.**
- **Produce at a high rate compatible with space required, investment costs, and total combing expense.**
- **Operate with a low productive cost per pound.**
- **Be easy to adjust, and hold the settings between overhauls.**
- **Run at high efficiency, requiring minimum expense to maintain, lubricate, and repair.**
- **Function so simply and smoothly that operator efficiency is high.**

...and that's just what the WHITIN model "J" does!

For all-round efficiency, versatility, and superiority of design, it has been acclaimed in both the United States and Europe. Thoroughly tested in mill installations ranging from a few to as many as 200, the Model "J" Comber is recognized as the finest comber yet developed.



Section from Uster graph made in mill test, Whitin "J" Comber sliver. The stock is 55 grain Pima. Test data: average variation, 17.6 per cent; maximum variation, 30 per cent.



Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, N. C. • DEXTER, ME.

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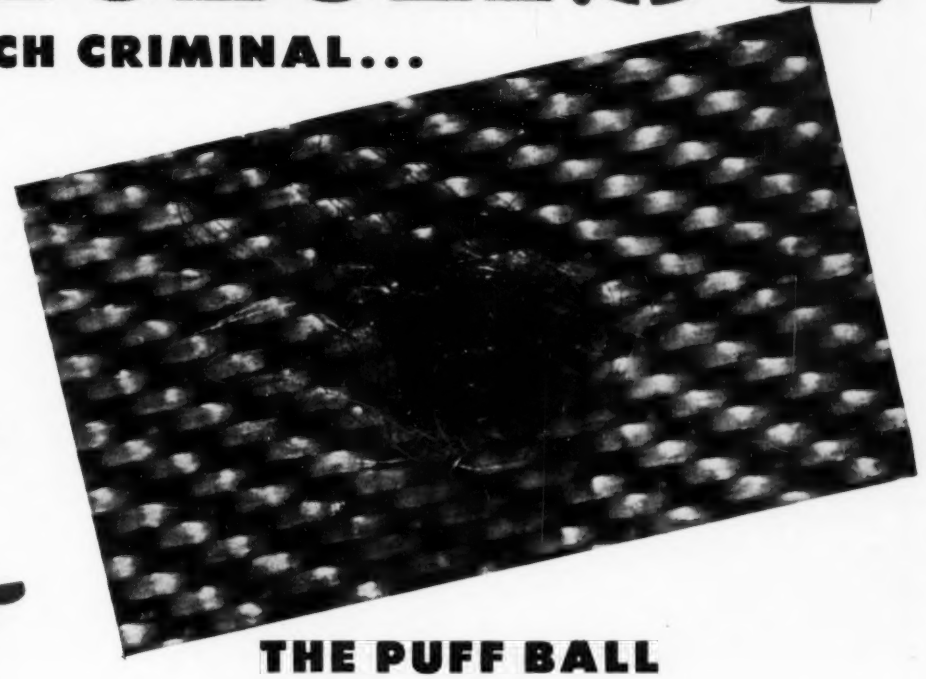
ARREST

THAT ARCH CRIMINAL...



THE PUFF BALL

The Crime... Expensive loom stoppage
The Solution... I.R.C.'s continuous process rayon yarn
The Reward... Production goes up—costs down!

Deadly enemy of production, the dreaded puff ball lurks behind drop wires, feeds on broken filaments and leaves a trail of overshots, dirt, yarn breaks and loom stops in its wake.

I.R.C.'s revolutionary Continuous Spinning Process solves this crime against the quality of rayon fabrics. It eliminates puff balls in fabric by eliminating knots and broken filaments in the yarn. This exclusive process spins, bleaches, treats, dries and twists rayon yarn "continuously" without once being touched by human hands. As a result, it is uniform in strength and virtually free from knots and broken filaments.

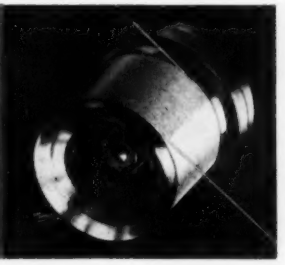
Now weavers the globe around know and rely on I.R.C.'s Continuous Process and are rewarded with rayon yarn that results in better fabric... a minimum of defects... higher production and lower costs.

Sales Office
500 Fifth Avenue,
New York 36, N. Y.

IRC

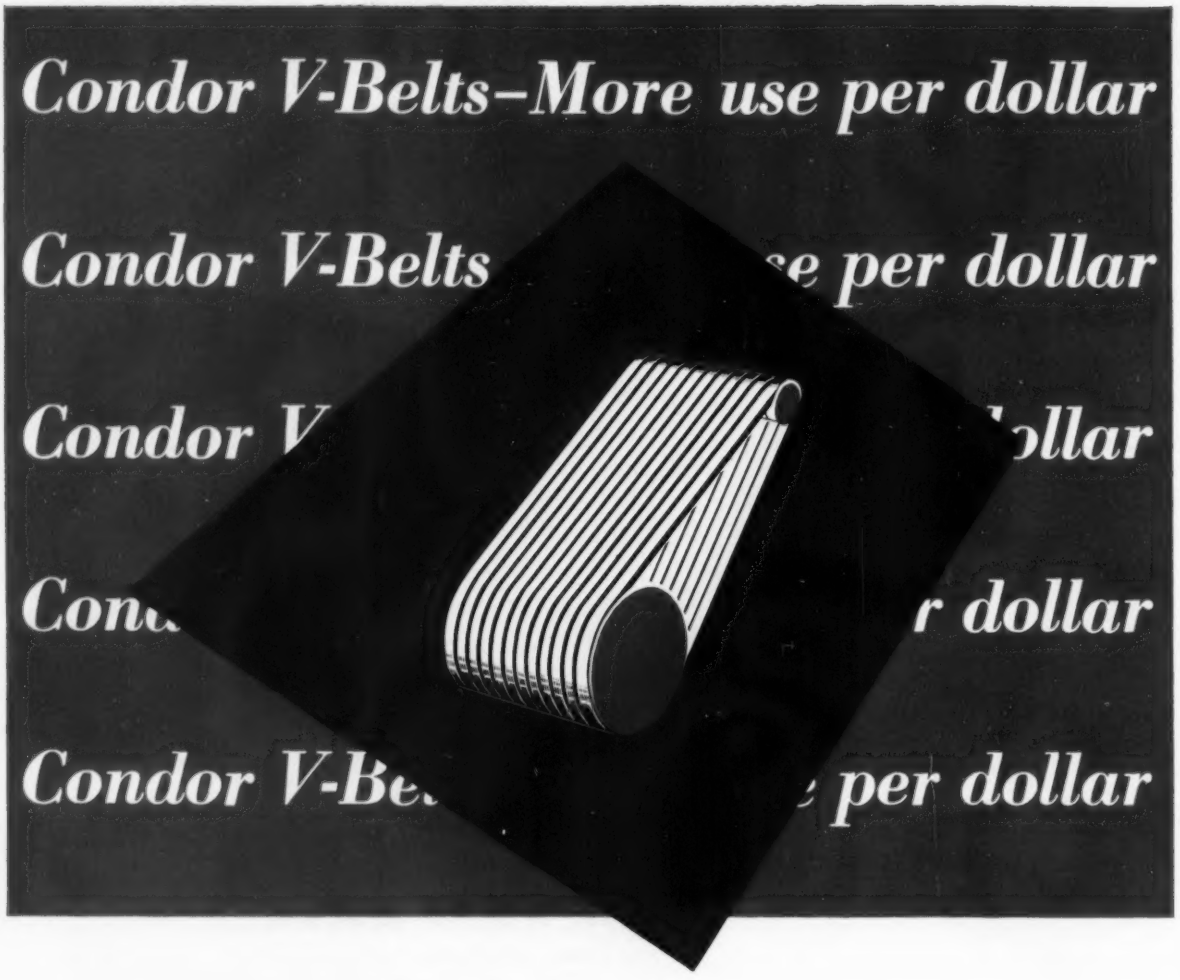
Industrial Rayon Corporation

Cleveland, Ohio



I.R.C.'s "Thread-Advancing" Reel... your guardian against flaws in rayon yarn.

 For more information, write direct or use Reader Service post card.

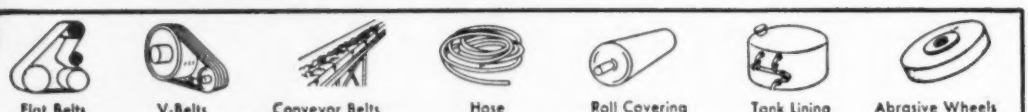


MORE GRIP, LESS SLIP, LONGER LIFE . . . . Yes, you save money with Condor V-Belts on even the toughest multiple belt drive. Straight sidewalls provide more grip, less slip, longer life. They are the smoothest running V-Belts made, because every part is precision-balanced in manufacture. This, too, means longer life. Also in special oil-, heat-, static-resisting types . . . Get the engineering facts. Ask the R/M distributor for Bulletin 6868 . . . He'll tell you, too, how you get MORE USE PER DOLLAR with R/M hose, transmission and conveyor belts.

R/M

MANHATTAN RUBBER DIVISION — PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.



Other R/M products include: Industrial Rubber • Fan Belts • Radiator Hose • Brake Linings • Brake Blocks • Clutch Facings
Asbestos Textiles • Teflon Products • Packings • Sintered Metal Parts • Bowling Balls

For more information, write direct or use Reader Service post card.

EQUALIZE THE SQUEEZE with Miller AIR CYLINDERS

Miller Cylinders on Three-Roll Mercerizing Padder Built by Cook P. & N. Machine Co.

Two Miller Air Cylinders (one at each end of the pressure roll) provide the steady, even "squeeze" so essential for the pressure rolls of Textile machinery.

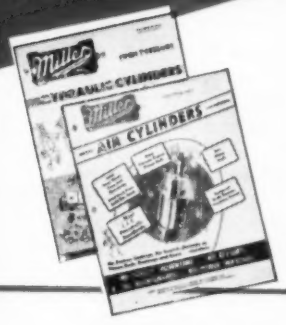
The variation in friction co-efficiency in these cylinders is practically negligible. Thus, whether the pressure is to be constantly held or re-applied as required, the "twin" cylinders can be depended upon to react simultaneously and in perfect unison to the slightest adjustment. Also, any desired pressure on the rolls can be duplicated and maintained at will.

These top performance qualities are "built-in" features of Miller Standard Air Cylinders proven 98% plus efficient (at 80 psi). The Miller Non-Adjustable Seals assure *consistency* of performance throughout cylinder life. This consistency is further guaranteed over exceedingly long periods of time by such standard Miller features as solid steel heads and caps, hard chrome plated piston rods, dirt wiper seals and non-corrosive cylinder barrels.

Miller

AIR CYLINDERS FOR

- **Padders**
- **Washers**
- **Steamers**
- **Rope Squeezers**
- **Bleaching Equipment**
- **Dyeing Equipment**
- **Other Textile Machinery**



WRITE FOR CYLINDER BULLETINS A-105 and H-104

Complete Miller cylinder line includes: air cylinders, 1½" to 20" bores, 200 PSI operation; low pressure hydraulic cylinders, 1½" to 6" bores for 500 PSI operation, 8" to 14" bores for 250 PSI; high pressure hydraulic cylinders, 1½" to 12" bores, 2000-3000 PSI operation. All mounting styles available.

SALES AND SERVICE FROM COAST TO COAST

CLEVELAND • YOUNGSTOWN • DAYTON • PITTSBURGH • PHILADELPHIA • BOSTON • HARTFORD • NEW YORK CITY • BUFFALO • ST. PAUL • GRAND RAPIDS • DETROIT • FLINT • FORT WAYNE • SOUTH BEND • INDIANAPOLIS • MILWAUKEE • LOUISVILLE • KANSAS CITY • SEATTLE • LOS ANGELES • SAN FRANCISCO • BALTIMORE • DENVER • ST. LOUIS • MOLINE • CHICAGO • HOUSTON • TORONTO, CANADA and OTHER AREAS

Miller

MILLER MOTOR COMPANY

2002-06 N. Hawthorne Ave., Melrose Park, Ill.

AIR & HYDRAULIC CYLINDERS • BOOSTERS • ACCUMULATORS
COUNTERBALANCE CYLINDERS

—and now TAPER-LOCK

There's only ***ONE*** **TAPER-LOCK**

FROM the package to the shaft — ready, *immediately,* for the job! This is the new "off-the-shelf" availability which Dodge brings to roller chain drives. And, with this new availability, you get the important advantages of the famous Taper-Lock principle, proved in millions of V-belt installations.

No more costly and time-consuming boring of sprockets to fit your shafts! *Taper-Lock bushings are available in a range of sizes for the great majority of industrial applications.* And it's not necessary that shafts be turned and ground to get a tight fit. *Taper-Lock not only is keyed to the shaft, but grips it with the firmness of a shrunk-on fit.* Yet when a sprocket is to be replaced, it comes off easily, quickly. The bushing may be re-used.

Taper-Lock sprockets are compact. They have no flange, and no protruding parts. Taper-Lock occupies no more space on the shaft than standard sprockets. The flush design means safety.

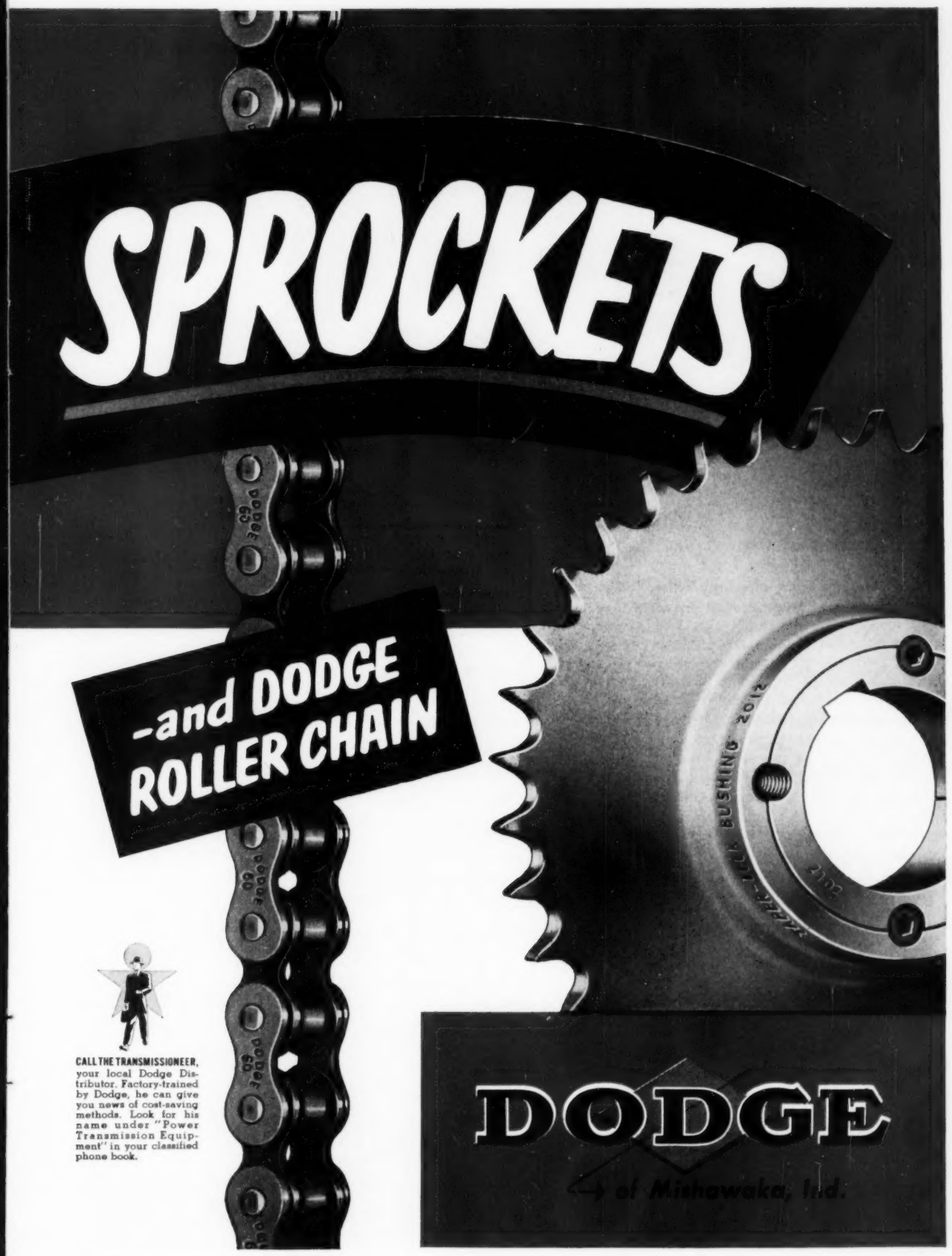
The new Dodge line of roller chain is made to highest quality standards, by craftsmen who know chain manufacture. Both chain and sprockets are made to ASA standards. Taper-Lock sprockets will take any make of American standard chain.

Taper-Lock sprockets will be carried in Distributors' stocks for immediate delivery, in a complete range of B-type steel sprockets—½" to 1¼" pitch. The range in ⅝" pitch, for example, is 12 to 112 teeth.

All bushings and the smaller sizes of sprockets are packaged individually. Dodge roller chain is packaged in 10-foot lengths — and can be furnished in 50-foot and 100-foot reels.

For detailed information about Taper-Lock sprockets and Dodge chain drives write now for Bulletin A-624.

DODGE MANUFACTURING CORPORATION, 1400 Union St., Mishawaka, Indiana



CALL THE TRANSMISSIONEER, your local Dodge Distributor. Factory-trained by Dodge, he can give you news of cost-saving methods. Look for his name under "Power Transmission Equipment" in your classified phone book.

New Ceiling on Noise and On Cost!

Reynolds Aluminum Acoustical Ceiling being installed in Naval Ordnance Plant, Pomona, Cal., operated by the Pomona Division of Consolidated Vultee Aircraft Corporation to build guided missiles.

Ideal for any large expanse...offices, schools, hospitals, industrial production and office areas!

Effective noise reduction, with the increased efficiency and safety it promotes, can now be brought to any large area with minimum work interruption and maximum speed. And the end result is distinctive appearance and exceptional performance...at amazingly low cost.

It's all done with large perforated panels of Reynolds Aluminum, attractively formed and finished...simply laid in place with sound-absorbent backing (see diagram), and just as simply taken down for access to space above.

Though military needs limit general supply, millions of square feet have already been installed and millions more are now being specified by leading architects. Call the nearest of the listed Franchised Applicators, or write us for literature. **Reynolds Metals Company, Louisville 1, Ky.**

Low Cost. Low material cost; fast, labor-saving installation.

•

High Sound Absorption. Up to .90 and high at all frequencies.

•

Unlimited Access to utilities... any section movable at will.

•

Low Maintenance. Rustproof, non-staining panels removable for cleaning.

•

Fire Resistant. Both aluminum and sound-absorbent backing are incombustible.

•

High Thermal Insulation. Greatly reduces summer cooling and winter heating costs.

•

Low Weight. Completed ceiling weighs less than one-half pound per square foot.

•

Modern Design. Eye-pleasing corrugations in straight-line or pattern effects.

•

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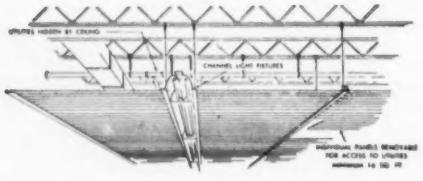

TYPICAL INSTALLATION. Panels are supported on aluminum angles and T-sections. Sound-absorbing material is laid on panels or attached directly to ceiling.

FRANCHISED APPLICATORS

ALABAMA: Badham Insulation, Birmingham; Stokes Interiors, Mobile.

CALIFORNIA: Pacific Acoustics, Los Angeles; Sound Reduction, Oakland.

COLORADO: Danco, Inc., Denver.

CONNECTICUT: Wilson Construction Co., Hartford.

DISTRICT OF COLUMBIA: T. M. Woodall, Inc., Takoma Park.

FLORIDA: Standard Insulation, Fort Lauderdale; Cliff Haller, Orlando.

GEORGIA: Lewis & Co., Atlanta.

ILLINOIS: Anning-Johnson Co., Chicago.

INDIANA: Brown-Anning-Johnson, Inc., Indianapolis.

IOWA: Anning-Johnson Co., Des Moines.

KENTUCKY: Braun Acoustical Co., Louisville.

LOUISIANA: Walker Lloyd, Baton Rouge.

MAINE: Edw. F. Byrnes Co., Portland.

MARYLAND: Limbach Co., Hagerstown.

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NEW MEXICO: Welch-Erwin, Albuquerque.

NEW YORK: Albany Acoustical Corp., Albany; A. P. Madden Co., Syracuse; Davis-Fetch, Buffalo, Rochester, Jamestown; Wm. J. Scully Corp., New York.

N. & S. CAROLINA: Bonitz Insulation, Greensboro, Columbia.

OHIO: Gellin Co., Cleveland; J. H. Archibald Co., Cincinnati.

OKLAHOMA: Ball Dist. & Eng. Co., Tulsa, Oklahoma City.

OREGON: Steward Griffith Co., Portland.

PENNSYLVANIA: Limbach Co., Pittsburgh; W. M. Moyer Co., Philadelphia.

TENNESSEE: Alexander Co., Memphis; John Beretta Co., Knoxville; Workman Co., Nashville.

TEXAS: C. F. Schilling Co., Houston; Gen'l Supply Co., San Antonio; Acoustic Builders Co., Dallas; Welch-Erwin, El Paso.

VIRGINIA: McL. T. O'Ferrell & Co., Richmond.

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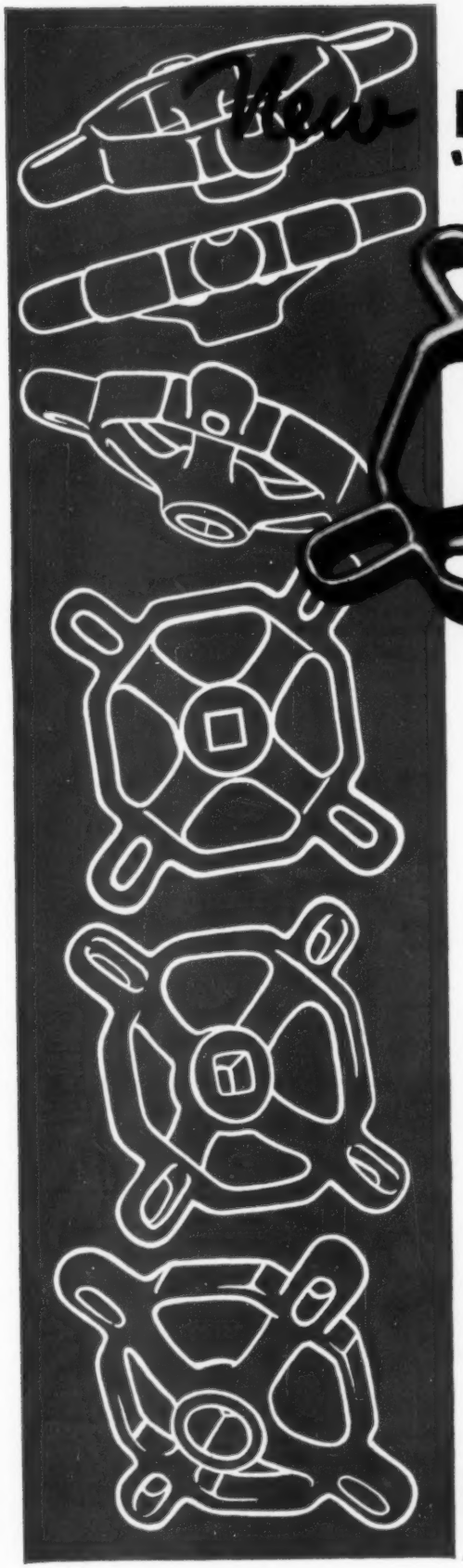

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TEXTILE WORLD

May, 1953 - Vol. 103 - No. 5

Hopi Acala—1951 Crop | Acala P18C | Acala 4-42

HOPI ACALA fibers, in comparison with other cottons—such as Acala P18C and 4-42, shown here—are rather circular and small in diameter, with relatively well-developed cell walls. In general, the fiber surface is smooth and lustrous, with small convolutions. The most outstanding characteristic is strength. (Magnifications are 550X.)

HOPI ACALA

What It Is and How It Performs

Three or four years ago mill men began to hear about new cottons of surprisingly high strengths. Hopi Acala 50, one of these high-strength cottons, has now undergone rigorous tests in 18 mills and pilot plants. Results of these tests show that this new high-strength cotton—

- Makes less mill waste
- Produces fewer neps
- Makes stronger yarns and fabrics

By

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Cotton Technologist
National Cotton Council

and

THOMAS KERR
Fiber Technologist, Cotton Div.
Bureau of Plant Industry
U. S. Dept. of Agriculture

A TEXTILE WORLD REPORT TO MILL MANAGEMENT

What Hopi Acala Is

Hopi Acala 50 cotton (breeding designation AHA 6-1-4) is derived from crosses between a modern Acala variety and a primitive Indian variety called "Hopi." It was developed at Shafter, Calif., by George Harrison, U.S. Dept. of Agriculture Field Station. In 1950, the total crop consisted of some 300 bales, all of which were used for extensive mill and pilot-plant tests to see how it performs in comparison with commercial cottons.

Its outstanding characteristic is fiber strength. Where commercial cottons usually range from less than 80,000 to 90,000 lb. per sq. in. in fiber strength, Hopi Acala ranges from 90,000 to 100,000.

It is also notably improved in luster, smoothness of fiber surface, circularity in fiber cross section, and ability to clean well.

Here are evaluations of some fiber properties of the 1950 crop—

(Mill laboratory tests on 25 bales)

Fiber Properties	Average	Range	Adjective Ratings
Classer's length (in.)	1 3/32—	1 1/16 to 1 3/32+	—
Laboratory's 25% point (in.)	1.108	1.066 to 1.142	—
Uniformity (%)	63	58 to 66	uniform
Fineness (mg. per in.)	5.0	4.8 to 5.2	fine
Fiber strength (1,000 psi.)	96	90 to 100	very strong

In the above table, the finenesses given (4.8 to 5.2) are usually considered coarse. However, Hopi Acala is distinct from other cottons because its cylindrical fibers give a coarse reading on the Micronaire although the fiber is actually quite fine geometrically. This phenomenon has been repeatedly noticed by fiber technologists.

General Description of Hopi Acala Fibers

Fiber cross section — Rather circular, small diameter, relatively well-developed cell walls

Fiber surface — Smooth, lustrous, with small convolutions

What Mills Say About Hopi Acala

MILL T —

"Only characteristic observed on this test was that the warps shed more than our control cotton. Approximately 10% more waste."

MILL E —

" . . . very pleased with this cotton."

MILL P —

"The cotton made such a dense cord that stretching techniques had to be modified. This is not a disadvantage, but it was a new experience."

MILL R —

"The Hopi Acala cotton ran good on all machines through the mills. It had more trash, particularly small trash, than the regular mix but was easier to clean. The staple was more uniform, the cotton having fewer short fibers and an extra-smooth, silky feel."

MILL J —

"Excellent processing . . . Superior product."

Cottons of the Future

Hopi Acala 50 does not yield well enough to make it an economical cotton.

However, it is merely the first such high-strength cotton produced in sufficient quantity to undergo wide mill testing. Cotton breeders already have a number of new cottons with properties similar to Hopi Acala well along the development stages. Some of these cottons, in a complete range of fiber lengths, will probably be available commercially in the foreseeable future.

How It Acts in the Mill

Hopi Acala 50 was processed by 13 mill and laboratory organizations in 18 mills and pilot plants. In each test, its performance was compared with the mill's regular cotton as the control. A variety of yarns and fabrics was made under widely differing manufacturing conditions, and these products were compared with similar products made from the several different control cottons.

Collectively, these tests give a picture of how a similar cotton can be expected to act in almost any mill.

You Can Expect—

In Carding and Preparatory Processes:

Better response to cleaning

Less waste

Fewer neps
About the same uniformity of intermediate products
More lustrous sliver and roving

In Spinning:
Fewer ends down
Stronger singles yarn
About the same yarn uniformity
Equal or better yarn appearance
Smoother, more lustrous yarns

In Other Departments:
Combing —fewer noils necessary
Spooling —fewer tailings
Twisting —fewer ends down
better strength
Slashing —better size pick-up
Dyeing —equal brilliance, depth, and evenness
Bleaching—equal results
Fabric —better strength
better physical properties (air and water permeability and abrasion tests)

It Has These Limitations—

High fiber strength is of less advantage than fiber length in soft-twist yarns.

The yarn probably has a lower elongation than yarn made of commercial cottons.

Full benefit of the high singles-yarn strength does not carry over into plied yarns or fabrics.

Fabrics do not respond as well as ordinary cotton fabrics to chemical treatments such as mercerizing and the Ustex process.

Where It May Be Used—

To increase strength of fabrics ranging from belting to ducks and sateens

For lustrous, high-strength sewing thread

For possibly reducing the bulk-to-strength factor in certain fabrics

For high-strength knitting yarns, mercerized and unmercerized

For blending with other cottons, asbestos, and synthetics to increase strength

How the Tests Were Made

Prior to 1950, Hopi Acala 50 had undergone numerous limited commercial and small-sample spinning tests. Results from both types of tests showed that the cotton makes very strong yarns; and in 1950, the USDA asked that Hopi Acala be given as wide commercial testing as possible. Anderson, Clayton & Co. grew and sold the test bales; and the National Cotton Council arranged the spinning tests, distributed the reports from mills and laboratories, and compiled the final report.

Most of the tests were planned to be conducted under commercial conditions. In addition, the cooperating spinners were encouraged to experiment with the cotton to determine its manufacturing potentialities and limitations, and mills were asked to compare Hopi Acala with their regular mill cottons in their standard products. As a result, Hopi Acala was subjected to a wide range of practical manufacturing conditions and tested in numerous standard and specialty textiles. Control cottons ranged from 1-in. Middling Upland to a 50-50 blend of Amsak and Karnak. Yarn numbers ranged from 6.35s carded to 78s combed.

Interpretation of Results

The results can be interpreted best by considering them from two viewpoints:

1. Results within a mill, where Hopi Acala is compared directly with the mill's control cotton

2. Average of all results obtained with Hopi Acala compared to average of all results obtained with control cottons

Final interpretations should be based on both viewpoints taken together.

Who Made the Tests

Organizations cooperating in the Hopi Acala project were: The Div. of Cotton and Other Fiber Crops and Diseases, Bureau of Plant Industry, U.S. Dept. of Agriculture, sponsor; The Anderson, Clayton & Co., grower and distributor of the 1950 Hopi Acala test cotton; National Cotton Council, which arranged and supervised the spinning tests; Southern Regional Research Laboratory, Bureau of Agricultural and Industrial Chemistry, U.S. Dept. of Agriculture; and these 13 mill organizations that processed the test cotton:

American Thread Co.
Bibb Mfg. Co.
Chicopee Mfg. Co.
Cone Mills Corp.
Graniteville Co.
Green River Mills
Joanna Cotton Mills
J. P. Stevens & Co.
Pacific Mills
Pepperell Mfg. Co.
Reeves Bros.
U.S. Rubber Co.
West Point Mfg. Co.

How Hopi Acala Performs

It Cleans Better, Makes Less Waste

Hopi Acala is especially responsive to cleaning operations. Any given grade of this cotton can be processed into relatively high-grade yarns.

The accompanying table shows how Hopi Acala compared with a variety of control cottons in the amount of waste removed. Precise comparisons cannot be made because the grades of cotton (Hopi Acala vs. control) were not the same. However, in no case was the grade of Hopi Acala above that of the control; in several cases it was below.

To get a true picture of cleanability of cotton, appearance of the final yarn must also be considered. The tables of yarn appearance on p. 94 and p. 95 show that in every case Hopi Acala produced yarn of equal or better appearance than the controls.

There is no ready explanation as to why Hopi Acala consistently yields less waste than other cottons. Three possible explanations are:

1. It has a more uniform fiber length. This quality may reduce card waste enough to lower the total waste shown in the table. In these tests, sources of waste were not separately designated.

2. In several cases Hopi Acala was longer than the control cottons. Trash is harder to remove from long cotton, and the tendency should be for Hopi Acala to yield less trashy waste.

However, if more trash were retained, yarn appearance of Hopi Acala should have been lower than the controls. Actually, yarn appearance was better—which seems to rule out the possibility that Hopi Acala retained more trash than the controls. In fact, there is some evidence that the spirality of the Hopi Acala fiber is such that the fiber can easily release trash.

3. The grades of Hopi Acala may have been influenced more by color than trash content. This possible explanation was not explored in these tests; but if that is the case, it might in itself be enough to account for the average of 0.37% less waste yielded by Hopi Acala.

Mill	Cotton		Waste		Hopi Acala minus control*
	Control	Hopi Acala	Control	Hopi Acala	
D	SLM	SLM	7.95(%)	7.34(%)	−0.61(%)
G	M 1 (in.)	SLM	6.77	6.52	−0.25
H	1	—	7.60	8.91	+1.31
I	50% Karnak — 50% Amsak	1 3/22 (in.)	11.01	10.62	−0.39
J	Delta SLM 1 1/16	SLM	7.47	6.73	−0.74
K	El Paso SM — GM 1 3/32	M 1 3/32	4.05	4.19	+0.14
R	M 1 1/8	SLM 1 1/8	7.39	7.01	−0.38
L	Memphis SLM 1 1/32	SLM 1 1/16	7.10	5.90	−1.20
M	Delta SLM 1 1/16	SLM 1 1/16	7.30	5.88	−1.42
N	Eastern and Memphis SLM — M 1 1/32	SLM 1 3/32	12.64	8.49	−4.15
O	Irrigated SM 1 5/32	SLM 1 3/32	9.38	11.99	+2.61
S	Memphis Territory M 1 3/32	SLM 1 3/32	7.12	7.38	+0.26
T	Delta M 1 3/32	—	11.40	11.41	+0.01
Averages	—	—	8.24%	7.87%	−0.37%

* Minus values indicate Hopi Acala yielded less waste than the controls.

It Reduces Comber Noils

Comber noils removed averaged 11.6%, against 12.8% for the control cottons. In five of the seven tests, Hopi Acala gave fewer noils; in the other two, it gave the same amount of noils.

Staple lengths of Hopi Acala and the control cottons were the same in five of the seven tests. If combing had been done on the basis of staple length alone, combers would have been set to remove the same amount of noils in these five mills.

Since fewer noils were removed from Hopi Acala, the normal expectation would be that the final yarns would show Hopi Acala inferior in strength and appearance. Actually, as is shown in the sections on yarn strength and yarn appearance, Hopi Acala yarns were equal or better in appearance and considerably stronger than the control cottons in all cases.

The purpose of combing, of course, is to remove short fibers so that the fibers that are left will make stronger, better-appearing yarns. The reason noils can be reduced with Hopi Acala is that it contains fewer short fibers. It has the best length uniformity of any commercial or experimental cotton grown to the 300-bale volume Hopi Acala reached in 1950.

It Makes Stronger Yarns

In 38 different yarns—10 fine, medium, and 18 coarse—Hopi Acala made yarns that averaged much higher in strength than the control yarns. As shown in the accompanying tables, the yarn number × strength products of Hopi Acala yarns showed the following average percentage increases over the controls:

Fine yarns —23.3(%)
Medium yarns—25.9
Coarse yarns —31.5

The increases in strength showed by Hopi Acala varied widely from case to case. In 26 cases, yarn strength increased 25% or more; in 10 cases, it increased up to 25%.

In only one case—Mill H, on 13.5s carded yarn—did it show less strength than the control cotton. The decrease in strength × yarn number product at this mill amounted to 2.3%. But Mill G, also on 13.5s carded yarn, obtained an increase of 29.4%. Mill L, on 14s carded yarn, had an increase of 46.3%.

Mill	Cotton		Yarn number to be spun	Comber Noils	
	Control	Hopi Acala		Control	Hopi Acala
K	El Paso GM — SM 1 3/32(in.)	M 1 3/32(in.)	30	15.5(%)	14.7(%)
M	Eastern and Memphis SLM 1 1/16	SLM 1 1/16	35	11.5	10.7
O	Irrigated SM 1 5/32	SLM 1 3/32	38	15.0	12.0
R	M 1 1/8	SLM 1 1/8	40	16.5	13.3
E	SLM 1 1/16	SLM 1 1/16	40	15.0	15.0
I	50% Karnak — 50% Amsak	1 3/32	78	14.0	14.0
S	Memphis Territory M 1 3/32	SLM 1 3/32	34	12.8	11.6

What Caused the Differences

Two factors may account for the widely varying results in yarn strength shown in the tables:

1. The fiber quality of the control cotton, compared to the quality of Hopi Acala

It must be remembered that each mill used its own cotton blend as a control. As can be seen in the various tables in this report, the quality of the control cottons varied much more widely than did the Hopi Acala.

In any given case, if the control cotton happens to be especially good, either in strength, length, or fineness, Hopi Acala will show relatively little increase in yarn strength. On the other hand, if the control cotton has inferior fiber properties, Hopi Acala might show some of the higher increases in yarn strength.

2. How well the mill took advantage of the quality potentials of both Hopi Acala and the control cotton

The manufacturing conditions in any given mill, set up largely for the mill's regular cotton, may or may not have been the best conditions for Hopi Acala.

An extreme case supporting this thesis is shown by Mill H, which had the 2.3% decrease in yarn strength. The control cotton at this mill was 1-in. staple. Hopi Acala, in most cases where staple length was given, ranged from 1 1/16 to 1⅛ in. Apparently the two cottons were processed at conditions standard for the regular cotton. As a result, Mill H reported that its rolls, set for its 1-in. cotton, were too close for Hopi Acala. Excessive ends down occurred, not to mention the adverse effects on yarn quality for the Hopi Acala samples.

Hopi Acala Is Adaptable

The 38 yarns listed in the tables range from 6.35s carded to 78s combed yarns. Results indicate that:

1. Hopi Acala is adaptable to a wide range of yarn

Mill	Yarn No.	Twist multiplier	Yarn No. × Strength product		Hopi Acala is of control
			Control	Hopi Acala	
Q	6.35K	—	2709	3082	113.8(%)
D	7.00K	4.50	1914	2635	137.6
P	7.50K	4.25	2100	3335	158.8
				3123*	148.7
				3058†	145.6
D	6.00K	4.50	2009	2479	123.4
G	10.00K	—	2278	2964	130.1
P	11.00K	3.75	2002	3339	166.8
		3.75	—	3149	157.3
			—	3013*	150.5
G	12.00K	4.50	2231	2834	127.0
S	13.30C	3.41	2812	3225	114.7
G	13.50K	4.50	2149	2782	129.4
H	13.50K	3.54	2117	2067	97.7
L	14.00K	3.86	1822	2666	146.3
	15.00K	5.06	1763	2458	139.5
M	17.00C	3.32	1942	2430	147.4
H	17.00K	4.75	2193	3232	125.2
Average			2146	2823	131.5

* Twist multiplier - 4.75
† Twist multiplier - 4.10

numbers and a wide variety of processing conditions.

2. With few or no changes in processing methods, it will make a stronger yarn than any one of several commercial cottons.

It is reasonable to suppose that if the mills ran Hopi Acala long enough to learn the optimum processing conditions, still greater strength gains could be obtained.

Mill	Yarn No.	Twist multiplier	Yarn No. X Strength product		Hopi Acala is of control
			Control	Hopi Acala	
N	20.00K	4.86	2078	2688	129.4(%)
M	22.00C	3.83	2266	3024	133.4
N	22.50K	3.86	2116	2651	125.3
M	23.00C	3.47	2376	3036	127.8
E	24.00C	3.65	2160	2719	125.9
J	30.00K	4.60	1772	2400	135.4
K	30.00C	3.25	2779	2997	107.8
T	32.00K	4.58	1899	2469	130.1
S	34.00C	4.20	2538	3130	123.5
M	35.00C	4.08	2210	2812	127.2
Average			2219	2793	125.9

Mill	Yarn No.	Twist multiplier	Yarn No. X Strength product		Hopi Acala is of control
			Control	Hopi Acala	
O	38.00C	4.00	2347	2713	115.6(%)
E	40.00C	3.15	1473	2407	163.4
J	40.00K	4.20	1619	2085	128.8
K	40.00C	—	2846	3108	109.2
R	40.00C	4.65	2717	2980	109.6
M	40.00C	4.00	1911	2837	148.5
T	42.00K	3.64	1728	2150	124.4
M	50.00C	4.11	1974	2659	134.7
K	60.00C	—	2347	2443	104.1
I	78.00C	—*	2522*	—	—
Average			2107	2598	123.3

* Used one TM for control, another for Hopi Acala, and did not report singles yarn breaks for Hopi Acala.

It Makes High-Grade Yarns

The appearance grades of Hopi Acala yarns were outstanding. In no case was it inferior to the control yarn, even though the grades of Hopi Acala raw cotton were comparatively low and, in general, less waste was removed in cleaning.

To get an adequate picture of a cotton's response to cleaning, both the amount of waste removed and the grade of the final yarn must be considered together.

Mills H, J, O, S, and T removed more trash from Hopi Acala than from the controls. Of the eight yarns made by these mills, five were of better grade than the control yarns.

Mills E and P made better-appearing yarns from Hopi Acala but these mills did not give comparative waste data.

In all other cases where comparisons are possible, less trash was removed from Hopi Acala than from the controls, but Hopi Acala yarns equaled the controls in appearance.

In small-sample and commercial tests, Hopi Acala has made lustrous and high-quality yarns. This quality of the yarns was attributed to the shape of the fiber, which generally tends toward a circular cross section and small convolutions.

These characteristics, combined with the fiber's high length-uniformity ratio and smooth surface, may contribute to a smooth, even yarn of good appearance and to easy cleaning.

Mill	Cotton		Yarn No.	Appearance grade	
	Control	Hopi Acala		Control	Hopi Acala
D	SLM	SLM	7.0K	B	A–
P	Western SLM 1 1/16(in.)	SLM 1 1/16(in.)	7.5K	B	B to B+
				–	B to B+
				–	B
G	M 1	SLM	10.0K	B	B
P	Western SLM 1 1/16	SLM 1 1/16	11.0K	B	B+
				–	B
				–	B
G	M 1	SLM	12.0K	B	B
S	Memphis Territory M 1 3/32	SLM 1 3/32	13.3C	B+	A–
G	M 1	SLM	13.5K	B	B
H	–	–	13.5K	B	A–
	–	–	17.0K	B+	A–

Mill	Cotton		Yarn No.	Appearance grade	
	Control	Hopi Acala		Control	Hopi Acala
N	SLM — M 1 1/32(in.)	SLM 1 3/32(in.)	20.0K	B	B
	Eastern and Memphis SLM — M 1 1/32	SLM 1 3/32	22.5K	B	B
E	SLM 1 1/16	SLM 1 1/16	24.0C	B+	A−
J	Delta SLM 1 1/16	SLM	30.0K	B	B
K	El Paso SM — GM 1 3/32	M 1 3/32	30.0C	A	A
T	Delta M 1 3/32		32.0K	B−	B−
S	Memphis Territory M 1 3/32	SLM 1 3/32	34.0C	A−	A
O	Irrigated SM 1 5/32(in.)	SLM 1 3/32(in.)	38C	A−	A
E	SLM 1 1/16	SLM 1 1/16	40C	B	B+
J	Delta SLM 1 1/16	SLM	40K	B−	B
K	El Paso SM — GM 1 3/32	M 1 3/32	40C	A	A
R	M 1 1/8	SLM 1 1/8	40C	A	A
T	Delta M 1 3/32		42K	C+	C+
K	El Paso SM — GM 1 3/32	M 1 3/32	60C	A	A

Neps Are Lower

Neps averaged 17.1 fewer in Hopi Acala card webs than in the control cottons. Only four mills showed an increase in the nep count for Hopi Acala. Nine mills showed a decrease.

However, the nep counts given in the table are somewhat confusing because mills reported nep counts either in neps per 100 sq. in. of card web, per gram, or per 100 grains. The results the mills gave are listed in the table, with no conversion being made from the mills' bases to a standard basis. Therefore, the 17.1 average nep decrease cannot be compared against any standard.

As can be seen in the table, the greatest numerical differences occur where a basis was used for recording neps that yielded a large number, both for Hopi Acala and the

Mill	Cotton		Number of Neps		Basis of reporting (Neps per . . .)	Hopi Acala minus control*
	Control	Hopi Acala	Control	Hopi Acala		
D	SLM	SLM	732.0	603.0	gram	−129.0
G	M 1(in.)	SLM	768.0	848.0	gram	+ 80.0
L	Memphis SLM 1 1/32	SLM 1 1/16(in.)	33.0	27.0	100 sq. in.	− 6.0
H			526.0	508.0	gram	− 18.0
N	Eastern and Memphis SLM — M 1 1/32	SLM 1 3/32	13.2	14.7	100 sq. in.	+ 1.5
E	SLM 1 1/16	SLM 1 1/16	10.0	9.0	100 sq. in.	− 1.0
J	Delta SLM 1 1/16	SLM	39.0	36.0	100 sq. in.	− 3.0
O	Irrigated SM 1 5/32	SLM 1 3/32	300.0	174.0	100 grains	−126.0
E	SLM 1 1/16	SLM 1 1/16	8.5	7.6	100 sq. in.	− 0.9
S	Memphis Terr. M 1 3/32	SLM 1 3/32	16.0	19.0	100 sq. in.	+ 3.0
T	Delta M 1 3/32		35.8	38.1	100 sq. in.	+ 2.3
R	M 1 1/8	SLM 1 1/8	20.0	14.0	100 sq. in.	− 6.0
I	50% Karnak — 50% Amsak	1 3/32	38.0	18.0	100 sq. in.	− 20.0
Averages			195.3	178.2		− 17.1

* Minus values indicate Hopi Acala produced fewer neps than did the control.

† Reported control in neps per 100 sq. in. and Hopi Acala as neps per 100 grains of card sliver; compilers converted control value to 100-grains basis on basis of 50 grains per yd. of sliver.

control cotton. The averages, of course, are heavily influenced by these high numbers.

In careful laboratory studies, a few neps difference may be important; but when a cotton is subjected to commercial processing, differences in the tendency to nep are often overshadowed by processing and/or counting methods. From either an economic or a statistical viewpoint, the Hopi Acala decrease in neps may or may not be significant. This determination, of course, is practically impossible to make from this series of data.

It Runs Better in Spinning

Ends down in spinning Hopi Acala averaged 32.4% fewer than the control cottons.

Of 22 yarns reported (omitting Mill H's 13.5s filling, which had excessive ends down directly attributed to improper roll settings), 17 showed ends-down reductions ranging from 4.5% to 69.7%. Three of the five yarns that showed increased ends down were influenced by abnormal conditions, explained in footnotes to the accompanying table. The other two yarns, run by Mill S, had 2.35 and 0.04 ends-down increases for Hopi Acala.

Mill	Yarn No.	Wind	Ends Down			Hopi Acala is of control
			Control	Hopi Acala	Hopi Acala minus control	
R	40C	Warp	18.70	16.80	− 1.90	89.8(%)
M	35C	Warp	26.00	18.12	− 7.88	69.7
	22C	Filling	28.21	14.01	−14.20	49.7
	50C	Warp	39.60	12.42	−27.18	31.4
	24C	Filling	35.00	22.20	−12.80	63.4
	40C	Warp	38.30	21.65	−16.65	56.5
	17C	Filling	34.00	15.50	−18.50	45.6
S	34C	Warp	14.76	17.11	+ 2.35	115.9
	13.3C	Filling	6.17	6.21	+ 0.04	100.6
P	7.5C	Warp	35 00	18.50	−16.50	52.9
	11K	Filling	30.00	10.00	−20.00	33.3
N	20K	Warp	12.77	20.40*	+ 7.63	159.7
	22.5K	Filling	16.53	19.62*	+ 3.09	118.7
L	15K	Warp	6.25	3.13	− 3.12	50.1
	14K	Filling	10.85	5.64	− 5.21	52.0
K	30K	Warp	17.00	11.00	− 7.00	64.7
	40K	Filling	33.00	10.00	−23.00	30.3
T	32K	Warp	23.14	21.41	− 1.72	92.6
	42K	Filling	30.78	29.42	− 1.37	95.5
H	17K	Warp	41.00	38.00	− 3.00	92.7
	13.5K	Filling	58.00	149.00†	+91.00	256.9
D	7K	Warp	53.81	41.47	−11.34	77.1
Averages‡			26.23	17.74	− 8.49	67.6

* Mill N reported that with added experience it could reduce ends down on Hopi Acala.
† Mill H reported that rolls were set too close for Hopi Acala's staple length.
‡ Omits Mill H filling-yarn data.

It Makes Stronger Ply Yarns

Nine mills reported on 16 ply yarns. In 15 of the 16 yarns, Hopi Acala made stronger ply yarns than the control cottons, averaging 121.6% of the strength of the controls.

The one exception was 78/2 combed control yarn made by Mill I from a 50-50 blend of Karnak and Amsak cottons. In this case, the Hopi Acala yarn had only 74.1% of the strength of the control cotton.

An important consideration in the use of cottons similar to Hopi Acala is whether or not their strength advantages can be fully utilized in plied yarns and fabrics.

These tests show that some of the fiber and singles-yarn strength does not carry over into these advanced constructions.

The singles yarns used to make the 15 ply yarns

averaged 30.8% stronger than the control yarns. But when they were plied, Hopi Acala yarns averaged only 21.6% stronger than the controls. In only three cases did the plied Hopi Acala yarns show a percentagewise strength increase over their superiority in the singles yarns going into the corresponding plied yarns.

Why They Are Stronger

Hopi Acala was still significantly stronger than the control yarns, but almost one-third of its extra singles-yarn strength was lost in plying.

There seem to be two possible explanations for this phenomenon:

1. The manufacturing methods now used may be less effective with this type of cotton than with the usual commercial cottons.

2. High-strength cottons such as Hopi Acala may not be fully adaptable to plying no matter what manufacturing methods are used.

Additional light on this subject is given by the Southern Regional Research Laboratory in a recent completed study to establish the relationships of fiber strength to yarn quality and processing behavior. In this study, Hopi Acala and two raingrown cottons were spun and twisted into a series of singles (12, 22, 36, and 50) and ply (12/2, 22/2, 36/2, and 50/2) yarns with a range of twist multipliers (2.75, 3.75, 4.75, and 5.75) for both singles and ply yarns in all combinations. Some findings of this study of particular interest in connection with Hopi Acala cotton are:

1. The Hopi Acala cotton spun into stronger singles and twisted into stronger ply yarns than the two raingrown cottons regardless of (a) the twist multiplier used for the single yarns, (b) the twist-multiplier combinations used for singles and ply yarns, and (c) the yarn number.

2. In general, the twist-strength trends were similar for the three cottons for both singles and ply yarns.

3. With the lowest singles-yarn twist (2.75 TM), ply-yarn strength and ply-yarn twist increased together over the range covered. In contrast, the reverse is true with high singles-yarn twist, with strength and ply twist being inversely related. With medium singles-yarn twist (3.75 TM), ply-yarn twist did not materially affect ply-yarn strength over the range of twist covered.

4. With equal singles- and ply-yarn twist multipliers, maximum ply-yarn strength is obtained with the 3.75 and 3.75 twist-multiplier combination, which coincidentally happens to be the one that gave maximum strength of the singles yarn.

5. Except for the lowest singles-yarn twist multiplier, the percent gain of ply-yarn strength over a singles-yarn strength is approximately the same for the three cottons, regardless of twist-multiplier combinations used.

The fact that Hopi Acala can be spun into singles and ply yarns of superior strength, irrespective of the twist used (within the limits of this experiment), and that its twist-strength trends in ply yarns are not dissimilar to that of the raingrown cottons with which it was compared may be an economically significant factor in the commercial use of this cotton or other cottons of similar properties.

Mill	Cotton		Yarn No.	Breaking Strength		Hopi Acala is of control
	Control	Hopi Acala		Control	Hopi Acala	
Q‡	SLM 1 1/32(in.)	SLM 1 1/16(in.)	K 6.35/6	20.48	25.98	126.9(%)
D	SLM	SLM	K 7.0/7	23.38	27.18	116.2
P	Western SLM 1 1/16	SLM 1 1/16	K 7.5/4	12.00#	15.40	128.3
G	M 1	SLM	K 10/3	6.59	7.86	119.3
P	Western SLM 1 1/16	SLM 1 1/16	K 11/4/2	17.36#	21.00	121.0
			K 11/4/2	17.36#	21.49	123.8
G	M 1	SLM	K 12/3	5.28	6.56	124.2
			K 12.7/4	6.87	9.00	131.0
			K 13.5/3	4.81	6.29	130.8
E	SLM 1 1/16	SLM 1 1/16	C 24/2	260.00*	301.00*	115.8
K	El Paso SM — GM 1 3/32	M 1 3/32	C 30/3	412.00*	452.00*	109.7
M	SLM 1 1/16	SLM 1 1/16	C 35/2	151.00*	203.00*	134.4
O	Irrigated SM 1 5/32	SLM 1 3/32	C 38/3	38.05†	40.41†	106.2
M	SLM 1 1/16	SLM 1 1/16	C 40/2	114.00*	157.00*	137.7
			C 50/2	97.00*	130.00*	134.0
I	50% Karnak — 50% Amsak	1 3/32	C 78/2	X 90.25*	X 66.90*	X 74.1
Averages				79.08	94.94	121.6

* lb./skein break † oz./single strand break ‡ This mill applied a special finish to its plied yarns.
\# Computed X Excluded from averages because of lack of comparable data on the singles yarns.

It Makes Stronger Fabrics

As was the case with ply yarns, the singles-yarn-strength advantage of Hopi Acala did not fully carry over into fabric. But the absolute increases in fabric strength are of economic importance.

Warpwise, Hopi Acala averaged 113.8% of the strength of 15 control fabrics; fillingwise it averaged 116.9% of the strength of 16 control fabrics. Only Mill I, which used the 50-50 Karnak-Amsak blend, made a stronger fabric from its control than from Hopi Acala.

Mill	Fabric construction	Warpwise		Hopi Acala is of control	Fillingwise		Hopi Acala is of control
		Control	Hopi Acala		Control	Hopi Acala	
D	Belting K	608(lb.)	700(lb.)	115.1(%)	288(lb.)	363(lb.)	126.0(%)
G	No. 8 Duck K	342	385	112.6	252	294	116.7
G	No. 10 Duck K	267	301	112.7	214	226	105.6
H	Sateen K	156	189	121.1	120	144	120.0
I	2/2 Twill C	203	178	87.7	101	89	88.1
I	Aero C	84	73	86.9	95	82	86.3
R	Broadcloth K	107	115	107.5	40	48	120.0
R	Broadcloth K	103	114	110.7	37	49	132.4
S	Oxford C	120	132	110.0	98	107	109.2
L	Twill K	207	272	131.4	115	143	124.3
M	Twill K	196	242	123.5	131	167	127.5
M	Poplin K	122	146	119.7	48	59	122.9
M	Poplin K	165	193	117.0	85	107	125.9
N	Sheeting C	83	102	122.9	90	128	142.2
T	Print cloth K	64	72	112.5	52	73	140.4
Q	Duck K	—	—	—	416	470	113.0
Averages		188	214	113.8	136	159	116.9

In Other Mill Processes —

These mill tests were planned primarily to test Hopi Acala's performance from opening through yarns and fabrics produced. Mills were encouraged to experiment, though; and several sidelights on other manufacturing performances came out of the reports.

In Spooling—

A spooler check on 22s yarn showed Hopi Acala had 25% tailings, compared to 28% on the mill's regular work.

In Twisting—

In two twister checks:

Hopi Acala 35/2 had one end down in 3 hr., compared to nine ends with regular stock.

On 30/2, it had seven ends down in 3 hr., compared to 12 ends with regular stock.

On the Uster Tester—

Mill M compared the uniformity of its regular stock with Hopi Acala at various processing stages with the Uster tester. Results were:

Process	Reg. Cotton	Hopi Acala
Carding	13.2(%)	12.8(%)
Breaker drawing	20.5	18.4
Combing	16.3	16.2
Finisher drawing	13.5	13.4
Roving (avg. of four hanks)	25.4	21.2
Yarn (avg. of six numbers)	70.1	65.4

In Blending—

Two mills experimented with blending Hopi Acala with their regular cotton.

Mill J: In pilot-plant studies, the addition of 20% of Hopi Acala to the mix increased singles-yarn strength 9%. This mill made the suggestion that one of the most profitable uses for a cotton of Hopi Acala's characteristics would be in blends.

Mill C: This mill replaced its regular cotton with Hopi Acala in a blend with asbestos. The regular blend contained 79.6% asbestos and 20.4% cotton. The strength of the yarn was 151.9 lb.

The blend with Hopi Acala contained 80.2% asbestos and 19.8% cotton. The strength of the yarn was 16.9 lb.

In Chemical Treatments—

Ustex: Hopi Acala showed less increase in strength than the control cottons when the patented Ustex process was applied. The comparison was:

Cotton	Gm. per den. after Ustex treatment
Hopi Acala	3.69
Control A — carded Karnak	4.22
B — carded 1 1/8-in. Upland	3.79
C — combed 1 1/8-in. Upland	4.14

The Hopi Acala increased only 59%, while the control yarns increased up to 80% over untreated yarns. Nevertheless, the Hopi Acala, for its length, made satisfactory yarn-strength gains over the untreated Hopi Acala yarns.

Mercerization: Several mills mercerized Hopi Acala products. In every case, the Hopi Acala yarn and cloth were both stronger untreated and mercerized than was the control. But, except in one measurement, Hopi Acala lost more strength percentagewise in the mercerizing process than did the controls.

Percentage losses were:

	Control	Hopi Acala
5.33 sheeting		
Warp	13.3(%)	4.9(%)
Filling	18.9	35.2
9.30 twill		
Warp	17.9	27.2
Filling	23.5	31.5
Oxford		
Warp	10.0	12.9
Filling	5.1	2.8

In Dyeing and Bleaching—

Mill K: Hopi Acala and the mill's regular 30/3 vat dyed with equal brilliance, depth, and evenness.

Hopi Acala and control 38/2 yarn bleached with equal success.

Mill L: Hopi Acala twill vat dyed a slightly brighter color than the control twill.

Mill P: A direct turquoise blue produced a satisfactory but greener, duller color than the control cotton because of Hopi Acala's lower grade.

In Slashing—

Mill E: Hopi Acala constructions took up 2% more size than the control constructions.

Mill T: Hopi Acala warps shed about 10% more than regular warps.

Fabric Properties—

Mill G studied air and water permeability and abrasion. Results on No. 8 and No. 10 ducks were:

Test	Control		Hopi Acala	
	No. 8	No. 10	No. 8	No. 10
Air	1.12	2.02	1.46	3.05
Water	Avg. 15.80 cc. at 34.7 cm. hydrostatic pressure for 8 and 10		Avg. 9.30 cc. at 31.5 cm. hydrostatic pressure for 8 and 10	
Abrasion (cycles) (CST Stoll)	431	313	482	327

It Has These Limitations—

Hopi Acala was bred for high fiber strength. In products where strength is advantageous, Hopi Acala is a notable success.

However, in certain uses its superior strength was not fully utilized.

In ply yarns and fabrics, for example, where factors other than fiber and singles-yarn strength contribute to final-product strength, some of Hopi Acala's strength advantage was not utilized. The further removed from the fiber the product is, the less it is influenced by the properties of the fiber itself.

Chemical treatments that, in themselves, contribute to strength also would not be expected to increase strength in Hopi Acala products as much as in products from ordinary cottons. The remarkable strength of Hopi Acala is most strikingly shown in the fiber and singles yarns. Chemicals added on the fiber would not be expected to increase its strength in the same proportions that they would increase the strength of a weaker fiber.

Soft-twist yarns, where the fibers are held loosely, may not get as much benefit from high-strength fibers as high-twist yarns do. However, the medium-twist yarns, as shown in a test comparing strengths of four yarns spun with different twist multipliers, are of very high strength:

Yarn No.	Yarn strength for:				
	2.75TM	3.75TM	4.75TM	5.75TM	6.75TM
12	236(lb.)	249(lb.)	217(lb.)	186(lb.)	157(lb.)
22	119	134	126	113	103
36	65	80	77	68	59
50	41	53	53	48	42

There seems to be a point in the twisting of Hopi Acala that is much more critical than for some commercial cottons. Similar tests on two commercial cottons did not show as proportionately rapid decrease in strength at twist multipliers above 3.75 as did Hopi Acala.

Optimum Conditions Not Known

Very few changes were made in manufacturing conditions by the mills that ran the Hopi Acala test cotton. As was pointed out in the table on ends down, one mill reported that it could improve its Hopi Acala results with experience. Another reported that its spinning rolls were set too close for Hopi Acala's staple length.

In some cases, Hopi Acala yarns were spun with twist multipliers apparently unsuitable for this cotton.

Two cooperating laboratories studied the response of Hopi Acala to various twist multipliers. Yarn strength obtained from Hopi Acala test with three different multipliers were:

Yarn No.	3.75TM	4.19TM	4.75TM
22	152.5(lb.)	161.9(lb.)	140.2(lb.)
36	88.0	89.6	86.3
(No. X strength, 22s)	3413	3545	3248

Appearance grade of all six yarns was B+.

The strongest yarns were spun with a 4.19 TM; but since the twist multipliers were changed approximately one-half number above and below 4.19, it is not certain that 4.19 represents the exact optimum twist multiplier.

The tables on singles-yarn strength in the section "It Makes Stronger Yarns" show that mills running the tests

used a wide range of twist multipliers. The multipliers varied as follows:

Fine yarns	**3.15 to 4.65**
Medium yarns	**3.25 to 4.86**
Coarse yarns	**3.32 to 5.06**

Based on the two experiments cited, it seems probable that Hopi Acala was at times spun with a twist multiplier somewhat out of its optimum range. Neither were the control cottons spun at their optimum twist multipliers, which incidentally are close to that for Hopi Acala. However, the control cottons are perhaps not proportionately so acutely affected should the twist multiplier be somewhat out of their optimum range.

These conditions mean that when high-strength medium-staple cottons are commercially available, some adjustments may be necessary to get the fullest value from them.

Plied Yarns

In the section "It Makes Stronger Yarns," it was shown that singles-yarn strength that averaged 30.8% more for Hopi Acala than for the controls dropped to 21.6% in ply yarns—a loss of about 9%.

Apparently, optimum conditions for plying yarns were not used in all cases. In the following table, five mills that reported skein breaks for plied yarns are listed. Some of these mills were successful in utilizing Hopi Acala's strength. Where the control plied yarns were 32.2% stronger than the singles used, the Hopi Acala plied yarns were 30.9% stronger on the average for all of the five mills.

However, two of the mills were distinctly more successful in plying their control cottons than in plying Hopi Acala. This affords some indication that further work on plying cottons like Hopi Acala could yield interesting results.

Mill	Ply Yarn	Control			Hopi Acala		
		Singles (No. X strength products)	Plied	Increase of ply over singles	Singles (No. X strength products)	Plied	Increase of ply over singles
E	C 24/2	2160	3120	144.4(%)	2720	3612	132.8(%)
K	C 30/3	2779	4120	148.3	2997	4520	150.8
M	C 35/2	2210	2643	119.6	2812	3553	126.4
M	C 40/2	1911	2280	119.3	2838	3140	110.6
M	C 50/2	1974	2425	122.8	2443	3250	133.0
Averages		2207	2918	132.2	2762	3615	130.9

In Conclusion

In this study, of necessity, most of the emphasis has been placed on strength—strength of fiber, yarn, plied yarn, and fabric. Hardly any mention has been made of other properties of a cotton that help make it distinct and outstanding from commercial cottons. Most mills and laboratories are not equipped to make the special tests that give quantitative values for luster, drape, and similar qualities.

A second phase of the Hopi Acala study is in progress. Special laboratories are measuring these seldom-tested qualities. A report on these special tests has been planned for a later date.

There is an obvious interest in cottons like Hopi Acala. When will such cottons be commercially available?

Accurate predictions as to the results of breeding programs are almost impossible. There are some strains related to Hopi Acala 50 that are in advance tests. If they pass, it would not take long to increase their seed to commercial proportions. These advanced strains, as well as some others, do show definite promise in small plots on experiment stations. But they may lack one or more essential characteristics that will not be apparent until they are grown by practical farmers.

As of now, because of the tests on Hopi Acala reported here, we know:

1. Cotton breeders are making progress towards commercial cottons similar to Hopi Acala.

2. Spinners can find many profitable uses for cottons like Hopi Acala.

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OSAGE'S FIRST STEP in weaving quality cloth is to put the looms in good mechanical condition for the specific fabrics to be woven. This loomfixer is setting a center stop motion.

LOOMFIXERS use a check card to check in new warps. This warp has been tied with a tying-in machine, and the race plate has to be recovered while the warp is on the loom.

PLANNED LOOMFIXING Results in Premium Cloth at Reeves Brothers

▶ Osage Mfg. Co., Bessemer City, N. C., a division of Reeves Brothers, Inc., is using W-3A and C-4 looms to make hard-to-weave patterns from synthetic fibers. Loomfixing is planned to eliminate seconds from these fabrics.

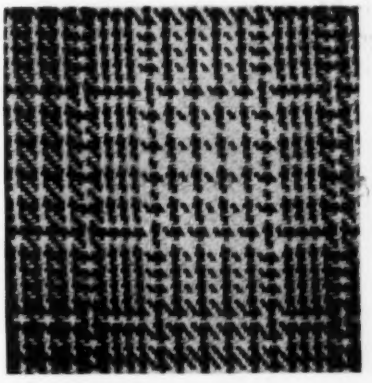
▶ Pictures on these pages show some of Reeves' Osage fabrics, their construction, and how they're woven.

By RICHARD B. PRESSLEY
Assistant Editor, TEXTILE WORLD

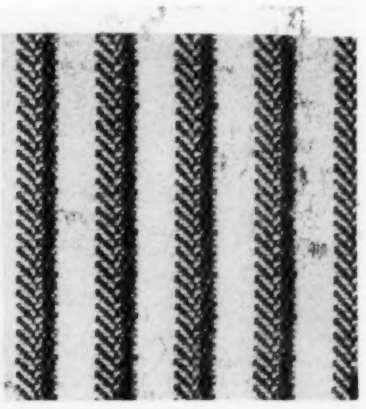
THE OSAGE MFG. CO., a synthetic-fabric-mill division of Reeves Brothers, Inc., isn't satisfied to weave the same line of fabrics each season. They're constantly experimenting with new designs and new fibers. Right now, they're developing a number of fabrics from Orlon, Vicara, nylon, Acrilan, and Dacron.

The usual styles are made from about 30% filament-rayon or acetate yarns and 70% staple-rayon yarns. Single yarns make up about 70% of the total yarns used, and two-ply yarns comprise the remaining 30%.

When new types of cloth are woven, they're cut into garments, and wear tests are made by Osage personnel. Then the designing department knows



THE OMBRE PLAID is woven by building the pattern up from two warp ends of 24/2 dull viscose and 24/2 dull acetate to four ends of each, and then six ends.



FILLING MIXING is necessary in this striped pattern even though only one size of dull acetate filling is used. The fabric is 60 in. wide and weighs 13.5 oz. when finished.

The following must be checked at each new warp:

1. Set the sixth tooth of the cylinder with the first tooth of the box section. This setting will level the harnesses about 2 in. from the fell of the cloth.
2. The lock knives must be all the way in when the cylinder contacts the vibrator.
3. Check and set the eccentric gears with the lay 11 in. from the breastbeam.
4. With the lay 9½ in. from the breastbeam, set the box motion to start to change.
5. Set the stroke 9½ in. in length with the lug 11 to 11½ in. from the center of the stud. Finish the pick at 10 5/8 in.
6. Check to see that the pickers are in good condition and parallel. Put on good bumpers.
7. Level and line the boxes and line the reed.
8. Check and tighten the harness cords on both ends of the harnesses.
9. Check the shuttles for excessive wear, and see that the fur is in good condition. Check and tighten the spring, and sand and shellac the shuttle.
10. See that all leather is in good condition. Put on a new race-plate cover, if needed.
11. Check the tension on the warp.
12. Check the brakes.

Good enough will not do—everything must be set right.

It is necessary that the above items be given close attention by every loomfixer so that we will have a good job. With every man doing his part, quality and production will be right.

Loomfixer.....

Second hand.....

SEPARATE CHECK CARDS cover specifications for C-4 (shown above) and W-3A looms. Loomfixers can't go wrong in setting loom motions because the cards give specific timings.

exactly how each fabric is wearing and what steps should be taken to correct errors. Records of the performance of the different weaves are kept to help eliminate undesirable characteristics in other designs.

Here's How Osage Stops Seconds

Weave-room temperature and humidity must remain constant if seconds are to be prevented and if production is to be kept high. The relative humidity at Osage is kept at 66%, and the temperature is held at 85° F. An air-changing humidity system with overhead atomizers is used.

The two major cloth defects are prevented this way:

1. Broken picks

a. When warps are out, the filling fork is examined for wear, worn parts are replaced, and the fork is set to Crompton & Knowles' specifications (all loom motions are set to C&K settings without any variations).

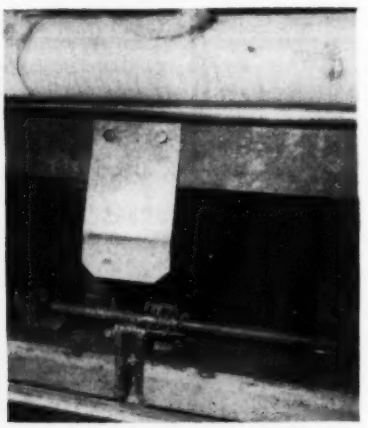
The fork motion is oiled, greased, and tested to be sure it stops the loom.

b. The shuttles are examined for conditions that cause broken picks. Hard-packed fur is removed and replaced with new fur. Two grades of fur are stitched together, to give the proper filling tension. A 4-in. length of A-grade fur is placed near the eye of the shuttle, and another 4-in. length of B-grade fur, stitched to the A-grade, is glued near the butt of the shuttle.

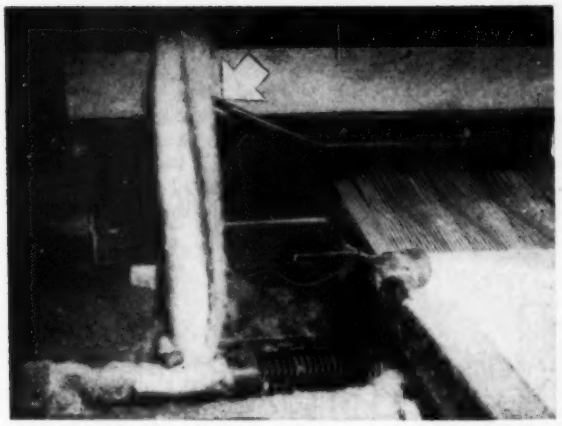
c. The eye tension pads are set with little tension for ideal threading-up conditions at the transfer. Since the eye tension is light, good fur has to be used.

d. Shuttles are kept polished so that

SECONDS ARE KEPT LOW because looms are checked as soon as cloth-defect tickets come from the cloth room. This loom will not be returned to production until the trouble is found and remedied.



TO REDUCE BROKEN PICKS, each loom is equipped with one of these shields made from heavy-gauge metal.



TO OVERCOME JERK-BACKS, a 2½-in. strip of 20-oz. blanket cloth runs from the protector rod vertically to the handrail on the head end of all looms.

WASTE YARN teams up with jerk-backs to become a troublesome cloth defect. A piece of card clothing riveted to a curved steel plate catches loose filling ends.

no rough places remain to break the filling.

e. Pickers are checked for excessive wear and for correct alignment.

f. Shuttles are kept boxed to prevent filling breaks at the transfer.

g. Weavers clean lint out of the fork wells once each shift so that the feeler wires will operate.

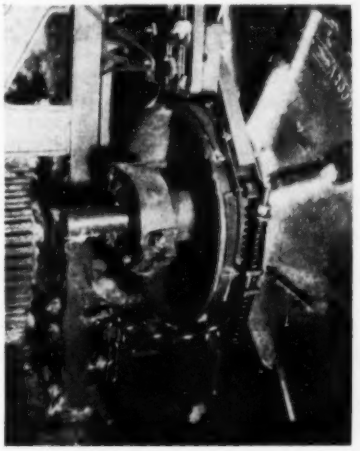
2. *Jerk-backs and waste filling*

a. Thread cutters are inspected periodically to insure correct operating conditions. Fiber holders are replaced when they become burred or worn, and the entire thread cutter is reset and tested to be sure filling ends are held firmly at the transfer.

b. Magazines are set to transfer the filling accurately.

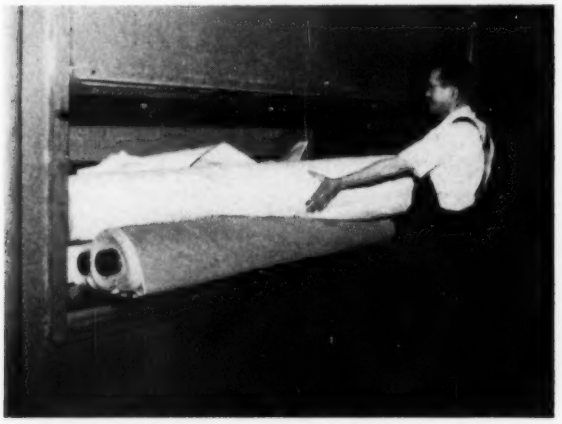
c. Shuttles are boxed to prevent rebounding so that the thread cutter will pick up the filling.

(*Continued on page 254*)

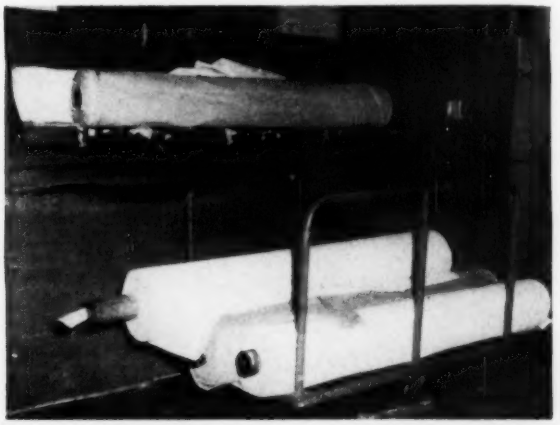


SET MARKS ARE FEWER since these friction bands were added to the beam-head drums. Fewer weights have to be placed on the precision let-offs.

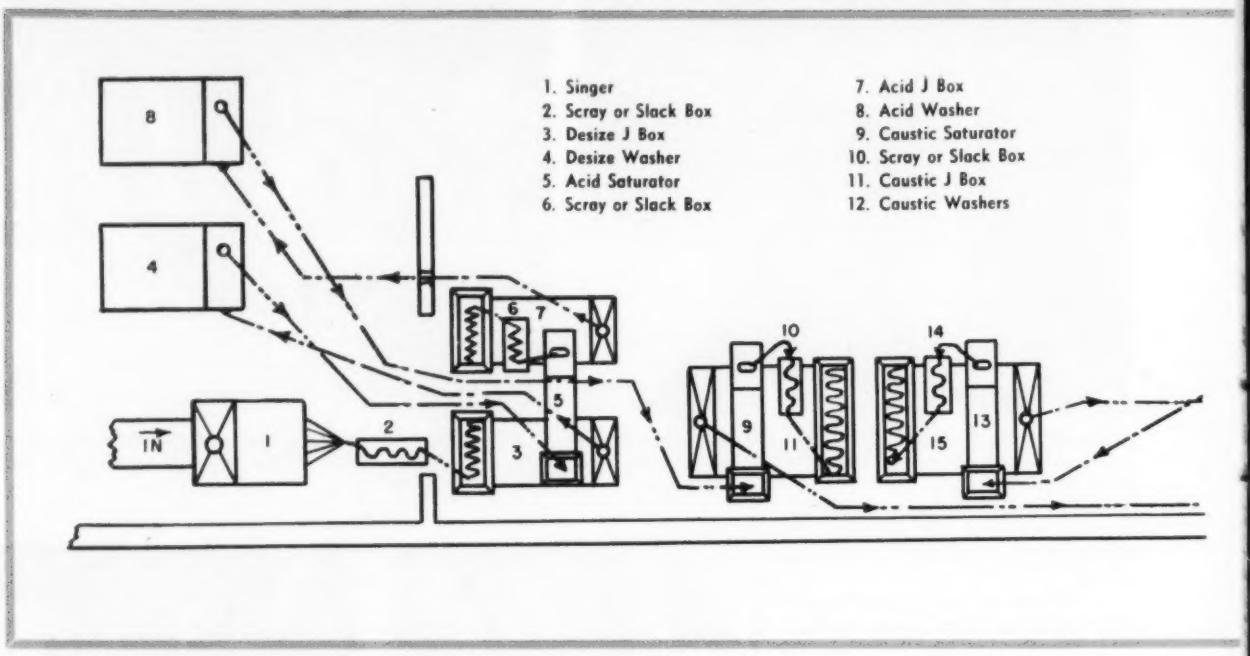
WARP BEAMS STORED on the spare floor in the weave room are easily accessible. The tripods slip on and off the beam journals quickly while a hoist lifts the beams.



CLOTH HAULING IS ELIMINATED because this automatic elevator takes rolls of cloth from the weave room to the cloth room, which is directly over the weave room.



CLOTH DUMPS ITSELF when it reaches the cloth room. Controls in the weave room tilt the cradle, and the cloth rolls into the truck waiting below the elevator door.



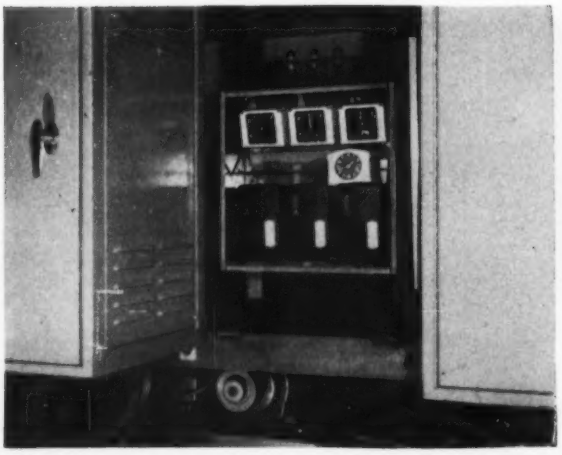
Compactness and Efficiency Make This BLEACH RANGE Novel

A Rhode Island bleachery has built a full-size peroxide range in an almost impossibly small space. Results:

- **Up to 1,800,000 yd. per week—70 lb. per min.—at 90% efficiency**
- **Only three operators per shift**
- **Top-quality bleaching performance**

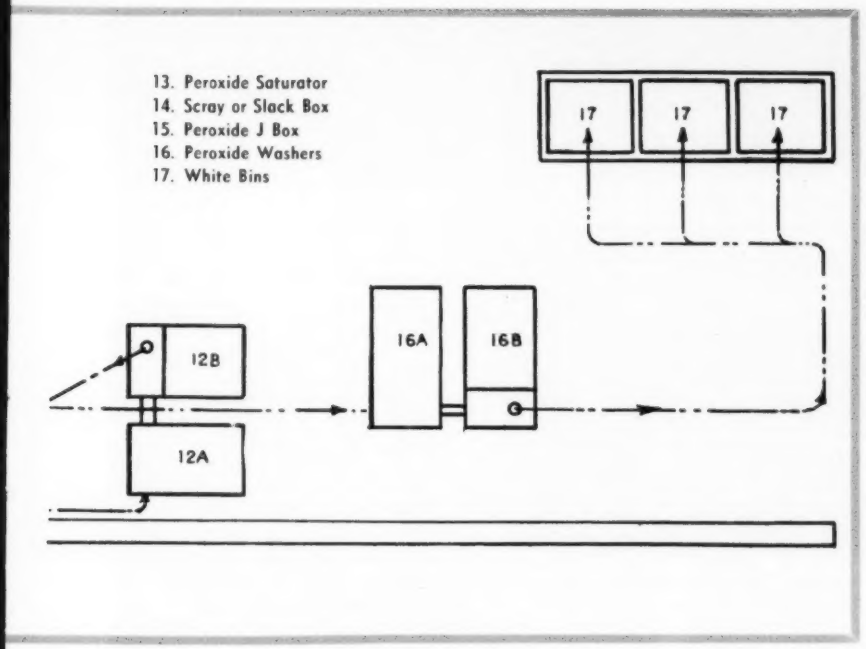
By GEORGE M. MOISSON
Assistant Editor, TEXTILE WORLD

IN A SPACE hardly large enough for one-third the equipment, Pontiac Div., Fruit of the Loom, Inc., Pontiac, R. I., has engineered and installed a



OPERATING TIME is recorded for each shift on this set of clocks activated by the caustic section. Accurate shift efficiency records are kept with the aid of these clocks.

TITRATIONS are performed by the shift leader, Bill Palazzo, at specified intervals. He also checks delivery of chemicals at each saturator on schedule.



Becco bleaching range that is running at 90% efficiency around the clock.

Here's How They Did It

The so-called "ideal" straight-line flow of goods from the singer to the white bins was impossible in the space available. A look at the diagram will show how space economy was effected. J-boxes were arranged side by side, and in the cradle formed by the Js a platform holds a saturator and a small scray. These units (3, 7, 5, and 6 in the diagram) are the desize J-box, acid J-box, acid saturator, and a scray.

From the desize J-box the cloth doubles back to a Rodney-Hunt washer, then goes forward to the acid saturator, across to the acid J-box, then back again to the acid washer. Farther forward in the range two larger J-boxes are arranged back to back. The first, a caustic J-box, forms a cradle for the caustic saturator and a scray; the second, a peroxide J-box, cradles the peroxide saturator and a scray. The pair of caustic washers (12a, 12b) and the two peroxide washers (16a, 16b) are located forward of the J-box area, in a low-ceilinged room.

A five-element motor generator set —on a common shaft—driven by a 400-hp. synchronous a.c. motor, provides the power for the range. This arrangement provides a better power factor, according to Pontiac's engineers, than individual a.c.-d.c. motor generator drives. Each unit motor has individual vernier-rheostat controls and load-indicating ammeter to prevent overspeeds and the resultant rope marks on the cloth.

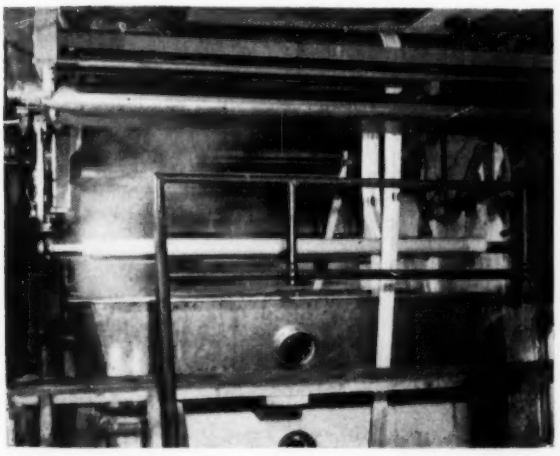
It probably is apparent that no dancer rolls or other compensating devices are used in this setup. Pontiac believes in the use of scrays and in manually controlled operation. The arrangement of units in the range is such that the operators can easily keep an eye on the scrays and keep them filled while they attend to other duties. By keeping a small reserve of cloth in the scrays at all times, the operator prevents the development of destructive tensions between units in the range.

Every cubic foot of available space is used, and this system leads to a further economy—labor. Three men run the range. In a pinch, if one man is out, two men can run the job. A provision for payment of the crew in this contingency permits sharing of a percentage of the absent man's pay between the two remaining operators. Crew morale and pride are extremely high.

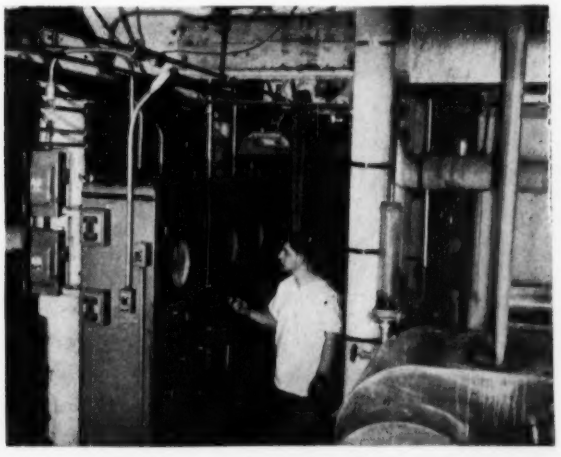
Control of the crew rests in a shift leader, one of the three crew members, who is also responsible for titrations. His schedule calls for an hourly titration at each of the three saturators and an hourly check of the actual rate of flow of chemicals to each saturator on the half hour.

Here's How They Run It

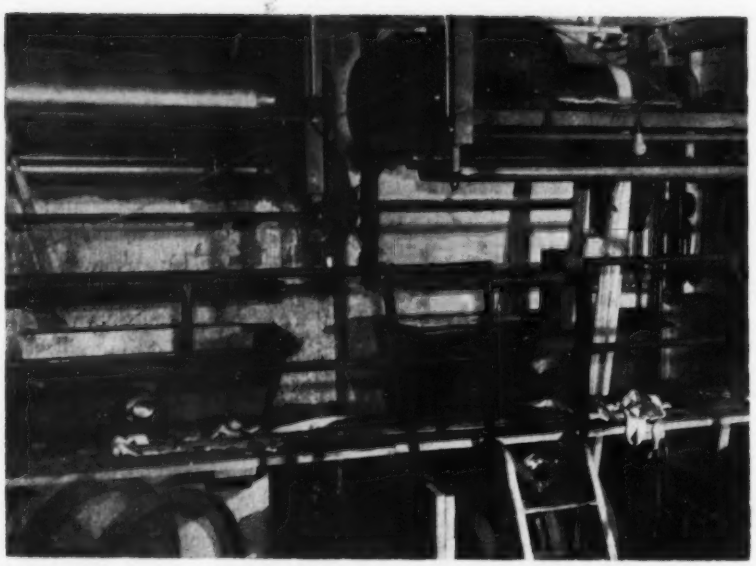
From the gray room, where bales are opened and ends are sewed, the



GOODS ENTER the caustic J-box over an easily accessible piler. Every possible trouble spot has been made available for quick attention when necessary.



INSTRUMENTATION is complete and provides a running record of all operations. Mr. Pallazzo watches over his quarter-million-dollar machine with loving care.



SIDE BY SIDE, the desize J-box and the acid J-box are easily watched and tended. The grouping of units in this range has contributed much to ease of surveillance.

cloth runs to a guider-type opener where it is fed open-width to the gas-fired singer. The cloth then goes through in rope form throughout the bleaching range. Goods range from 2.65 to 9 yd. per lb.

Quenching, after singeing, takes place in an enzyme solution (diastase type). The solution concentration, 0.5% enzyme and 0.125% wetting agent (alkylarylpolyether sulfate type) maintained at a pH of 6 at a temperature of about 150° F., is based on the flow of goods through the range—in this case approximately 70 lb. per min.

Desizing takes place in a J-box maintained at 212° F. Total time in the enzyme is about 45 min.

Washing after desizing is performed in a Tensitrol washer with counter flow water at 180° F.

Acid saturation, with 1% H_2SO_4 solution, is performed at 120° F. The following J-box is unheated. Goods remain in the acid for 20 to 30 min. The acid J-box is made of Type 316 stainless steel.

Washing after acid is performed with water from the second caustic washer (12b in the diagram), at 145° F. This practice conserves heat and water. This washer is also built of Type 316 stainless steel.

Caustic saturation is done with 50% caustic solution, as purchased in tank-car lots, pumped by a proportioning pump. The operation of the caustic-scour section activates the shift-recorder clocks, which are used to calculate operating efficiency of the range. Goods remain in the caustic J-box for 1½ hr. at 215° F.

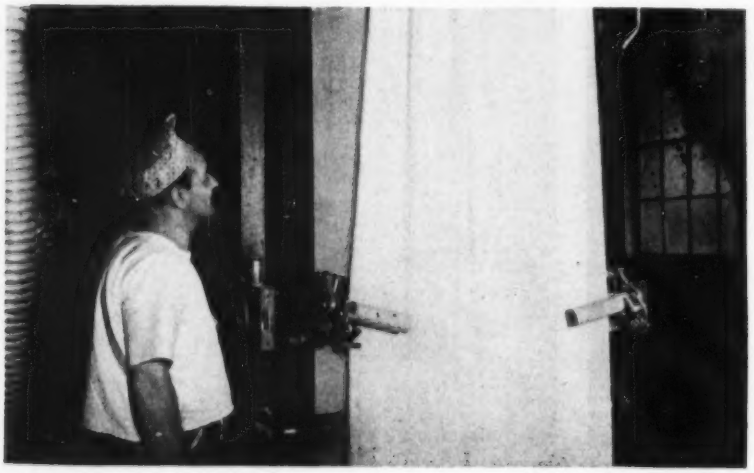
Washing after caustic treatment takes place in two machines (12a, 12b). The water in 12a is reused from the first peroxide washer (16a). Fresh water is supplied to 12b.

Peroxide saturation, with 197 volume H_2O_2 buffered with sodium silicate to a pH of 10 to 11, is performed at 130° F. Proportioning pumps deliver H_2O_2 at a rate sufficient to maintain 0.7% (on weight of goods) in the saturator.

Pontiac has found the use of sequestering agents in the peroxide saturator in optimum concentration based on water hardness to be very beneficial. The build-up of silicate deposits in the J-box is prevented and the former cleaning costs are eliminated. Silicate consumption is cut 30%.

Bleaching takes place at 210° F. for approximately 1 hr. Regular and frequent checks are made on goods, as they leave the J-box, for the presence of H_2O_2. If H_2O_2 is expended completely, a color reversion will occur. Care must be taken to insure the presence of a small excess of H_2O_2. The peroxide J-box and the peroxide washers are made of Type 316 stainless steel so that they may be used for hypochlorite bleaching if ever needed.

Final washing takes place in two washers, the second with fresh water counterflowed to the first. Final water temperature runs about 130° F.



CLOTH ENTERS the bleaching range at this point, where it is opened for singeing by gas flame. The quench box also serves to impregnate the goods with an enzyme.

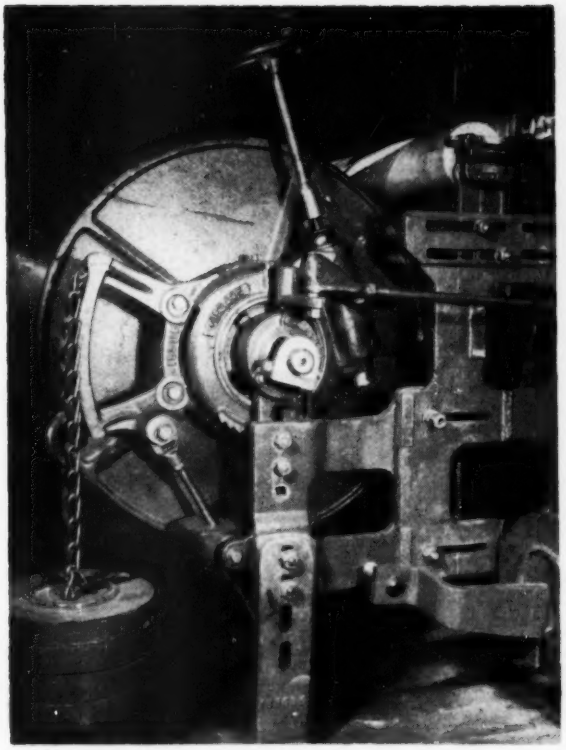
—With These Results

Since October, 1952, when the range was first put in operation, efficiency has been good; and it is still improving. Over a recent 40-hr. period the range ran at 240 yd. per min. at 100% efficiency. The average weekly run (five days, three shifts) turns out over 1,500,000 yd. of goods—all top quality, without bruise marks, suitable for dyeing or printing, or for use as white goods. The new, and not entirely original, slogan at Pontiac is: "We've never had it so white!"

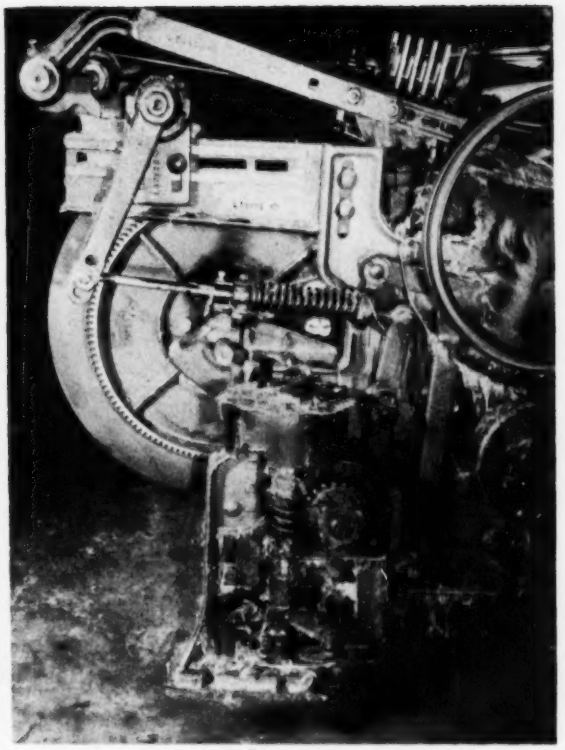
Here's the Incentive System

Under the present setup, a pay bonus is automatic when the range operates at speeds over 50 lb. per min. according to the following schedule:

Rate (lb. per min.)	Demand (% efficiency)	Bonus (% max. at 100% eff.)
50	76	13
60	74	18
70	72	22
80	70	27



BETTER CLOTH can be woven on older-model Crompton & Knowles looms if precision or other new-type let-offs are added.



WORN LET-OFFS on Draper looms can often be replaced more cheaply than they can be overhauled.

How Modern Is Your WEAVE-ROOM Machinery?

► A survey that compared old looms in a few weave rooms with looms in modernized weave rooms shows that—

- An improved harness motion increased weaving efficiency by 1% at one mill
- Individual motor drives can increase loom speeds
- Newer spreaders increase production and improve quality
- Bartlett let-offs make more-even cloth
- Several other developments improve weaving conditions

By **RICHARD B. PRESSLEY,** Assistant Editor, TEXTILE WORLD

A SURVEY THAT COMPARED old looms in a few weave rooms with looms in modernized weave rooms shows that several loom motions can be replaced to modernize old looms. Among the new motions are harness motions, drives, main-shaft stabilizers, let-offs, and many small-part replacements that make looms run faster and better.

Is Your Harness Motion Modern?

Take harness motions, for instance, on E, X, K, and X-2 looms. Most of the motions are of old types. They wear out a lot of harness straps, break warp ends excessively, and in general cause a lot of trouble through lost production and through needless waste of loomfixers' time.

Many mills are running the old-type motions without improvements.

Other mills are changing to clock-spring-top harness motions on light and medium weaves. Then too, double clock-spring tops are applied to looms over 54 in. wide.

Men using clock-spring tops point out these advantages:

1. More styles of cloth can be woven than on roll-top motions.
2. Fewer warp ends are broken.
3. The warp shed is kept clean be-

(*Continued on page 200*)

6 Tips To Improve Sock LOOPING

• If you're having trouble looping socks made from nylon, Orlon, or dynel, these tips may help you:

> Knife angles and tensions must be given greater attention

> Even-stitch attachment produces fewer menders

> Rubber brush does a better job of clearing

> Cotton yarn can be striped in after the toe is knitted

By JAMES H. BLORE, Assistant Editor, TEXTILE WORLD

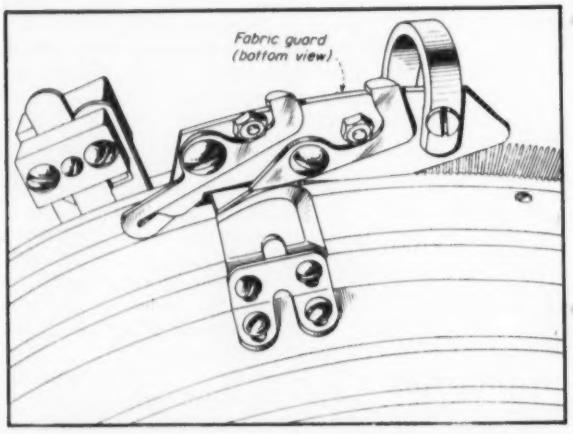
PROBLEMS IN LOOPING have multiplied with the coming of synthetics, but several new methods and products are helping to solve these problems. Here are some ideas to prevent menders and poor-quality work.

1 Check Cutting Angles

The abrasive properties of the new synthetics cause most of the loopers' troubles. Trimmer knives soon get dull and begin to saw instead of cut. Knives need more frequent sharpening.

More care must be given to the cutting angles when knives for nylon and nylon-reinforced socks are ground. Looper builders have built special knife grinders to insure that angles are ground to give the best trimming results. An adjustable index plate allows all types of knives to be ground, and the task of trimmer-knife grinding is simplified.

New knives have a razor edge that soon wears off and causes faulty looping. The trimming attachment can be made to operate correctly when the razor edge disappears if proper adjustments are given to the trimmer settings and tensions.



THE BINKLEY EVEN-STITCH ATTACHMENT trims the sock as it is pulled down on the points.

2 Watch Trimmer Settings

The upper and lower knives on Sotco loopers can be raised and lowered as one unit. The first step in adjusting the trimmer is to set the unit to cut the course of stitches above the looper line.

The trimmer tension can then be set by turning the knurled adjusting nut so that the upper and lower knives work together like a pair of scissors. The knives should be set so that they merely touch and do not ride on each other.

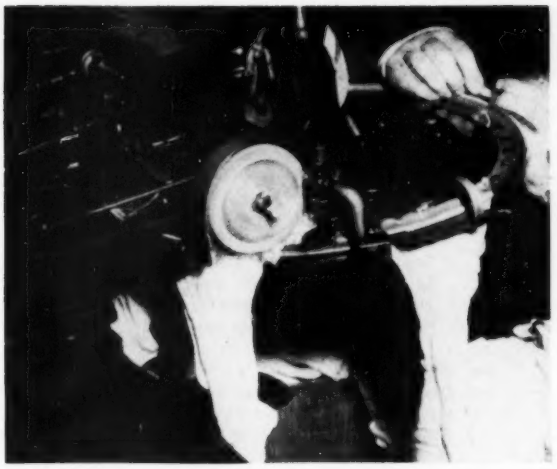
If too much tension is placed on the knives, faulty trimming results and the knives wear out rapidly. When a satisfactory trimming adjustment has been established, the lock nut should be tightened to preserve the setting.

3 Consider Carboloy Knives

To offset the difficulties encountered in looping nylon socks, some looper fixers have used carboloy knives. These knives are expensive but outwear steel knives. Tension adjustment is just as important on carboloy knives as it is on steel knives. Too much tension causes carboloy knives to chip and begin to produce faulty work again.

4 Try This Even-Stitch Device

Many mills have found the Binkley even-stitch attachment of great benefit for looping nylon socks. This device is fitted to loopers to pull down both sides of the sock so that the stitches are evened out and lie flat on the points.



RUBBER BRUSH cleans out the loose stitches better than the conventional bristle brush.

LINT accumulates on the bristle brush faster than it does on the rubber brush.

Loopers can be given slacker looping courses without fear of cutting the stitches. The trimmer knives can be lowered so that there will be less runoff for the brushes to clean out.

The Binkley attachment is fitted partly to the fabric guard and partly to the dial, close to the trimmer knives. As the sock rotates on the points, the fabric below the points is pressed against a sloping cam by a similarly sloped spring lever. As the cams slope downward, the fabric runs down the cam and pulls the stitches down on the points.

5 Stripe in a Cotton Yarn

A mill knitting Helanca nylon socks has improved its looping by striping in a cotton yarn after the knitting of the toe. The nylon yarn is striped back in again just before the next sock is started.

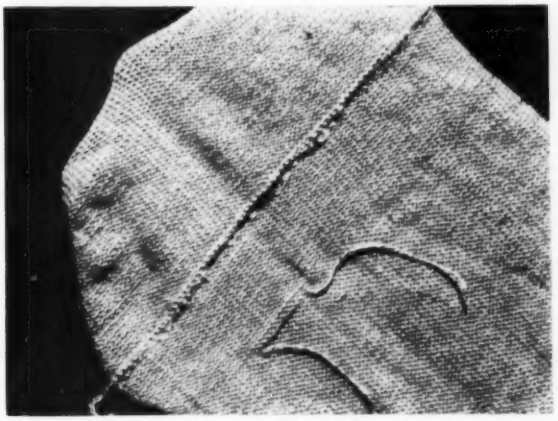
Striping in a cotton yarn saves wear on knives, prevents runs past the looping line, and enables the cut stitches to be cleaned out better. Costs are also cut by reducing the amount of the high-priced Helanca yarn that would normally go into the wastebasket as looper's rounds.

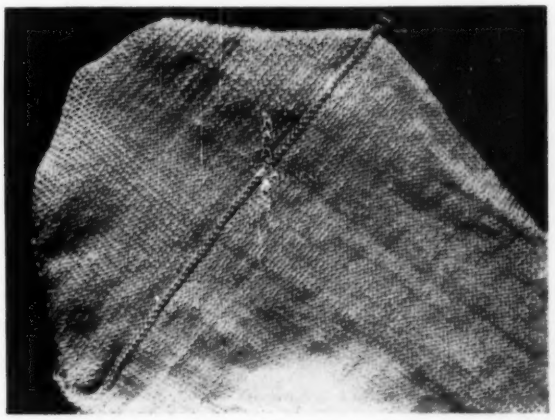
6 Use a Rubber Brush

Filament-nylon reinforcing yarn is used by many mills in the toes of cotton socks. This yarn sometimes prevents the brush from making a good job of clearing away the loose stitches.

The substituting of a Sotco rubber brush for the bristle brush has been found a great help in clearing out the loose stitches. The rubber brush is made up of four disks of rubber clamped tightly together but separated by cork disks. The rubber disks can be rotated when they wear in one place so that they last almost indefinitely.

One mill using the rubber brush found that the brush kept the looper points smooth and clean. The higher setting of the rubber brush reduced friction on the points, and the machine ran smoother and faster. Lint did not appear to accumulate so readily on the rubber brush as on the bristle brush.





BEFORE AND AFTER pictures show the clean neat looping job on the right made with the rubber brush. The 40-den. nylon reinforcing was responsible for the loose stitches in the seam on the left, which couldn't be cleared by the bristle brush.

Simple Tests for Various Fibers That Arrive Blended at the Mill Or That Need Checking During Processing

For acetate . . . . . .

1. Sample thoroughly throughout the bale and card the sample.
2. Dye a small sample with Black GX00.
3. Fiber colored a golden hue is acetate.

For acetate, Vinyon, and dynel . . . . . .

1. Place weighed sample in a beaker and cover with acetone.
2. Stir for 20 min.; remove undissolved portion; wash; bone dry; weigh.
3. Fiber lost percentagewise was acetate, Vinyon, or dynel.

For separating acetate from Vinyon or dynel . . . . . .

1. Cover weighed sample with glacial acetic acid at room temperature.
2. Stir for 5 min.
3. Fiber lost percentagewise was acetate.

For nylon . . . . . .

Test No. 1

1. Place weighed sample in a beaker and cover with refined phenol.
2. Stir for 10 min.; wash; bone dry; weigh.
3. Fiber lost percentagewise was nylon.

Test No. 2

1. Cover weighed sample with 1:1 HCl (dilute conc., specific gravity 1.10) with equal volume of water.
2. Stir for 10 min.; wash with 100 ml. 1:1 HCl followed by excessive washes with water.
3. Neutralize with 2% $NaHCO_3$; wash; bone dry; weigh.
4. Fiber lost percentagewise was nylon.

For wool, hair, or silk . . . . . .

1. Drop weighed sample into boiling solution of KOH (5 grams per 100 ml. of solution).
2. Boil 10 min. (using about 100 ml. of solution for 0.5 gram of sample).
3. The following results may be noticed:
   - . . . . . wool, hair, and pure silk dissolve completely.
   - . . . . . Tussah silk is not completely dissolved.
   - . . . . . protein fibers have substantial residues of a slimy gelatinous nature. They should be filtered through a 100-mesh screen, washed thoroughly, and bone dried before weighing.

CHEMICAL TESTING for blend content is done at the cards, in the yarn, and after the fabric has been finished. Waste

Blending and Testing Are Keys To Good WOOL-WASTE Processing

▶ This reprocessed- and reused-wool manufacturer produces excellent-quality merchandise for specific end uses by . . .

. . . carefully controlled fiber mixing

. . . constant testing of blend-component percentages

. . . a continuous machinery-modernization program.

By GUSTAV ZELLNIK, Consulting Editor, TEXTILE WORLD

THE MANUFACTURE OF fabrics containing wool waste is a specialized technique that requires careful control all along the manufacturing process. Success is obtained in the manufacture of fabrics that are accepted and trusted in the trade only by being sure that (1) you start off with the correct blending of fibers needed to produce a good end fabric, (2) your blending fiber percentages don't go haywire during processing, and (3) your yarns and fabrics are of the best quality possible.

A prominent wool-waste fabric mill is doing an excellent job manufacturing good-quality fabrics in just such a manner. The mill has modern high-speed equipment for all processes, including the preparing and processing of rags, clips, and threads. Its average yarn size is 3½ run.

Rag Picking

Rags, clips, and threads are run through a large Schofield rag picker, and the stock is opened to the extent needed for the blends required. When additional preparatory work is needed, the opened material is run through a two-cylinder breaker card.

The mill also runs nylon clips and threads regularly through the rag picker. Nylon stock is used with low-grade wool stock (when the finished-fabric price makes the use of low-grade wool necessary) in about a 15% ratio by weight so that sufficient body and strength will be obtained in the fabric. The use of nylon also improves carding and spinning and makes them comparable to running medium- or high-grade wool-waste mixtures.

Nylon clips sometimes cause flash fires on the rag picker that fuse the nylon to black-colored specks in the stock. This fusion occurs most with white nylon—almost never with dyed nylon stock.

This mill has solved the flash-fire problem by wetting out and drying all the nylon stock it puts through the rag picker. In addition, the mill slows down the main cylinder and thus reduces the heat generated by high-speed operation.

Stock Dyeing

Regular tests are made on stock that

Reagent	Method of Application	Types of Fibers Tested	Soluble	Insoluble	Partially Soluble
acetone	Room temp.	mixed	acetate, Vinyon, dynel	all other fibers	
glacial acetic	Room temp.	acetate, Vinyon	acetate	Vinyon	
1:1 hydrochloric	Room temp.	mixed	nylon	all other fibers	
5% caustic soda	Boiling	mixed	wool, hairs, cultivated silk	celluloses, nylon, and resin fibers	regenerated proteins, Tussah silk
Conc HCl	Room temp.	protein	cultivated silk	all other fibers	proteins, Tussah silk

Note: Violet color means a casein fiber

losses of types of fibers are thus spotted, and adjustment for final desired percentage results can be made.

is carbonized and raw-stock dyed. Fiber strength is watched closely to see that it is not injured in any way beyond a permissible tolerance. Stock is never allowed to get brittle.

When a blend is to be dyed, stock is packed into a 500-lb.-capacity pressure-dyeing kettle and processed in the usual manner. After dyeing, the stock is lifted out by an overhead hoist and allowed to drain; it is then pulled by rake over a lattice apron to the hopper of the drying range.

The drying range consists of a long continuously moving lattice apron running through heating chambers. Stock is carried to this apron from the hopper by a vertical spiked apron that feeds the stock through squeeze rolls to an opening unit that fluffs out the dyed stock. The stock then moves onto the drying apron.

Preliminary opening up of the stock before drying reduces the steam requirements for drying and increases the speed of drying (and thus the productive efficiency of the dryer).

From the dryer the stock is blown to the baling press. It is then taken to the picker room for immediate processing or is stored in the warehouse for later use.

Blending on the Pickers

At the time of our visit to the mill, a blend of 20% nylon, 25% rayon, and 55% wool and wool waste was running through the picker.

The first batch of the blend was laid out on the lattice apron of the picker; and the material, after going through the picker, was blown into a 10,000-lb.-capacity storage bin. The bin is equipped with a revolving Truslow blending unit operating from the ceiling, and air currents in the bin are minimized by means of an attached baffle. The picker production rate was given as approximately 5,000 lb. per hr.

Waste Wool Can Be Used Advantageously

There are two different kinds of what used to be called "shoddy." Both can be used advantageously in some types of wool fabrics, especially if the stronger types of synthetic-fiber waste stock can also be used to give added fabric qualities as needed.

1. One group is "reprocessed" stock; that is, material that has never been used in clothing. It can be almost as good as virgin wool and sometimes is better than the original fiber.

To the reprocessed group belong lap waste, noils, thread waste, newly woven or knitted clips, etc. There are different types of noils, such as French, Bradford, and Lister. French noils are the shortest in length, then Bradford. Lister noils are the longest-staple noils.

Thread and clip waste have to be opened on a rag picker, shredder, or garnett. Regardless of this material having to be opened up again, it is good stock and entirely adequate for a large number of products.

2. "Reused" stock comes from old rags, old clothes, and other fabrics that have been worn or used. The stock has to undergo certain preparatory processes: disinfecting, washing, drying, and then shredding or rag picking. When hard-twisted yarns are involved, the partially reopened stock has to be run through a garnett to get complete opening.

As reused fibers have neither the staple length nor the length of the original fiber, care has to be observed in specifying how much reused wool goes into a blend. Too much waste wool will make the work run bad and ruin the quality of the finished fabric.

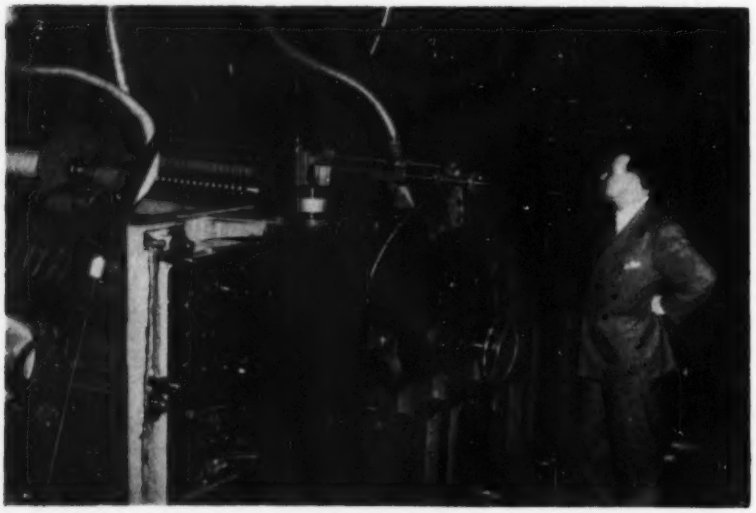
DYED STOCK is pulled out of the dye machine to be dried on a continuous dryer before it is blown to the baling press. It is then taken to the picker room or stored in the warehouse for later use.

PICKER-PROCESSED STOCK IS BLOWN to 10,000-lb.-capacity bins equipped with Truslow blending units. This setup serves as a double-blending operation by means of only one handling through the picker.

Accurate Labeling Is Important

A mill manufacturing with wool waste has to be very careful to observe to the letter the Wool Labeling Act. Not only must the consumer be told what he is getting in a fabric, but also such a mill nowadays is liable to claims from the garment manufacturer.

In short, the fiber content of fabrics produced must be what the label says; and this fact means constant checking during processing so that no hidden fiber losses can creep in.



50-IN.-DIA. DOFFERS on the woolen cards give increased production and turn out quality work. The author is inspecting the doffer's continuous-stripping setup.

After the first blending, the stock is sucked through a pipe to a second picker. After further mixing in this picker, the stock is blown to another storage bin similar to the first one. If the blend is a one-color blend, the stock is blown to a bin located above one of the card hoppers.

If a heather blend is being prepared, the stock gets a third picking, which is also carried out with a minimum of manual handling of the stock. This arrangement means that the stock gets six blendings before it goes to the cards—three on the pickers and three from bin blending.

The picker-room help consists of a foreman and three helpers. They turn out 70,000 lb. per week in a one-shift operation that keeps the card room operating around the clock five days a week.

Carding

On the floor above each card hopper, the mill has built large storage bins, each of which holds about 5,000 lb. of blended stock blown from the picker room.

The funnels leading down to the card hopper one floor below hold about 1,000 lb. each. They can be closed off from the 5,000-lb. storage bin so that, while the final 1,000 lb. of a blend is being run out of the funnel, stock for the new blend can be blown to the larger storage area and gotten ready for carding. Thus,

no time is lost at the cards in changing from one blend to another.

Several of the wool-type cards in the mill have 50-in. doffers. The management likes the higher production obtained from the larger doffers as compared to the 36-in.-dia. doffers. A humidifying system throughout the room keeps all stock running smoothly.

The larger-doffer cards have a continuous-stripping suction-fan arrangement located above each fancy. The attachment keeps the fancy from making bands around the cylinder and other bad work and keeps dust and fly at a minimum in the card room—both important features in the carding of short staples.

No good stock is lost by this continuous stripping arrangement, as the fly obtained is collected in a box at one side of the card and what is still usable is brought back by hand and fed evenly around the stock in the back hopper. Thus, this short-staple stock is evenly redistributed and does not weaken the roving ends at each side of the jack spool at the finisher end of the card.

Maintenance of the cards is on a definite schedule. At least 14 of the 16 cards are kept running continuously, while two of them may be down for checking, grinding, reclothing, or refurbishing. Maintenance is handled by a crew from the machine shop. While the shop men are engaged in the work, they are responsible to the card-room foreman.

Spinning and Weaving

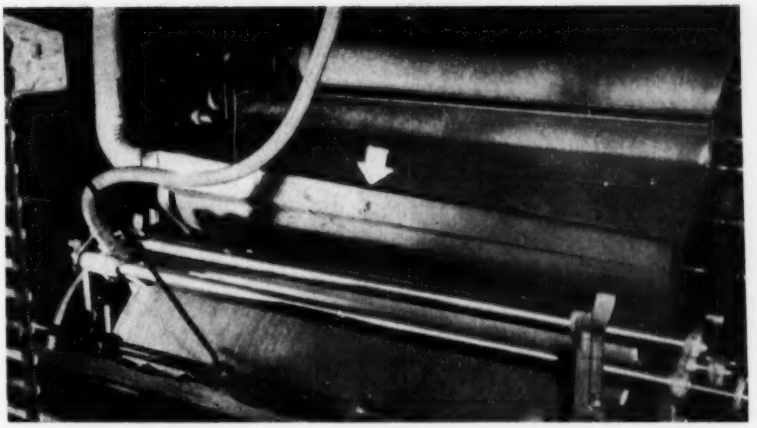
In the spinning room, ring spinning frames, each with 120 spindles, are set up for the time being with a workload of two frames per spinner. Experiments are under way to see if spinners can handle 360 spindles per operator without lowering the quality of the yarn. Frames equipped with Pneumafil are a step in this direction.

Waste collected from the frames is either taken to the card room periodically to be fed back into the appropriate card hopper or is stored for future reuse if the blend is no longer running in the card room.

Static is kept to a minimum in the spinning room by the use of humidifiers and by the careful preparation of the blends in the preceding processes.

In the weave room, all looms are automatic and are equipped with specially arranged beam stands that make from 30 to 34 cuts possible from a single warp.

Boxes and magazines have been enlarged to take a shuttle that holds a 4-oz. bobbin of yarn. Weavers can handle six to eight looms.



CONTINUOUS-STRIPPING ATTACHMENT above the fancy (arrow) eliminates bands and other bad work and keeps lint and fly to a minimum. Waste is deposited in a box and distributed in the hopper by hand to prevent heavy waste content on the ends of the jack spools.

Blending Hints

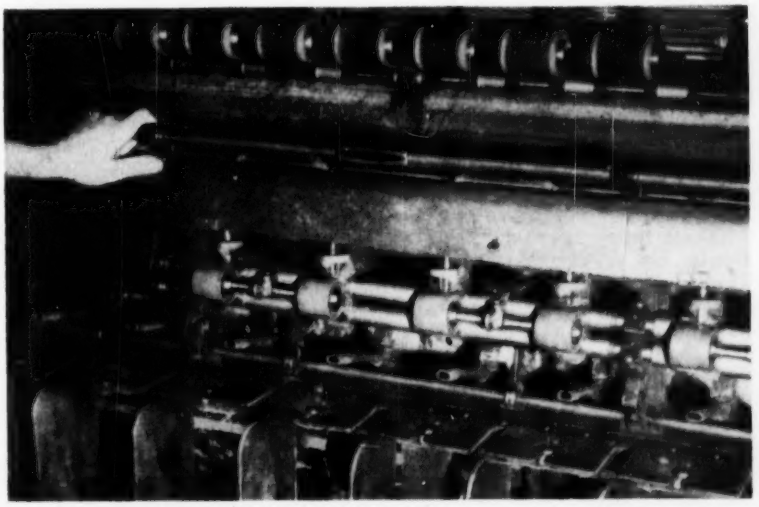
▶ The mill uses a large quantity of short noils in the manufacture of suede cloth.

▶ In the manufacture of covert cloth, the bulk of the blend consists of garnetted worsted threads. Results achieved are far better than those obtained when shorter-staple virgin wool is used.

▶ Automobile fabrics made by the mill consist of a blend of 15% nylon, 20% rayon, 40% cotton, and 25% wool (virgin and reprocessed). Staple length of the blend averages between 1½ and 2½ in. The fabrics meet all strength-test requirements.

▶ When static problems are encountered, the mill adds to its emulsion on the picker about 2% of Dianol ANC (Quaker) or Avitex (Du Pont) as an antistatic agent. But blends containing less than 25% nylon do not give static trouble.

▶ Any blend in the mill containing Orlon has only stock-dyed Orlon in it to avoid the many problems involved in obtaining an even color with Orlon in a piece-dyed blended fabric.



PNEUMAFIL AIR-SUCTION SYSTEM on the wool-type spinning frames prevents many yarn defects and keeps the frames cleaner than frames ordinarily are in a wool-waste mill.

We Increased Bobbin Weight By 20% in Warp SPINNING

- The laying-on stroke now goes down, and the tying-on stroke goes up
- The lay gear was reduced until no wood could be seen after the first laying-on stroke
- Spooler operation is better, and a simple ratio was used to apply the new ideas to all yarn numbers

By W. M. BENSON

A FEW SIMPLE CHANGES, plus the discarding of some old ideas, have enabled us to increase the weight of our warp bobbins by 20%. We now get 0.52 lb. of 15s warp yarn, a 50-50 rayon-acetate blend, on a 10-in. bobbin with a 2½-in. ring. We formerly got 0.42 lb. per bobbin.

All we did was install a production builder, reverse the builder cam, increase lays per inch, and make the mechanical adjustments necessary for these changes.

We estimate that it takes only about 30 min. between doffs to make the necessary changes, and five doffs are usually enough. That means only about 2½ hr. of an overhauler's time. And the results from one frame can be applied to all other similar frames in about 30 min. per frame. The savings in doffing costs, spooler operation, and improved yarn quality are evident and well worth the small investment in labor.

Why We Reversed Our Builder Cam

The old rule-of-thumb method is to have the laying-on stroke going up and the tying-on stroke coming down, but the more we thought about it the more we found wrong with that method.

When the ring rail comes down fast, you're moving away from the source of supply faster and using up traveler lag to let you move away. The greatest tension made on the yarn by the traveler occurs when the ring rail is at the top; so moving away from the source of supply quickly can break an end that ordinarily wouldn't come down.

We reversed our builder cam so that the laying-on stroke is on the way down and the tying-on stroke is on the way up. This change caused some sloughing in spooling; so we decided to increase lays per inch.

Increasing Lays per Inch Stopped Spooler Sloughing

Our old lay gear was giving us $\frac{3}{64}$ to $\frac{1}{16}$ in. between lays on the laying-on stroke. We changed our lay gear from a 40 to a 25, shortened the stroke, and increased picks to fill the bobbin.

This change increased bobbin weight 3% and reduced sloughing somewhat, but we were still not satisfied.

So we dropped one tooth at a time on the lay gear until we were down to a 22-tooth gear. By this time our sloughing problem had been eliminated and the air space between lays was practically nil. Our lays were so close that we couldn't see the bobbin after the first laying-on stroke. The yarn was practically overlapping at the grooves on the bobbin.

Other Minor Adjustments Completed the Job

Knowing that we had reached our goal on lays per inch, we then adjusted our stroke, chain length from pulley to cam follower, and picks to give us the desired build. Since the builder cam had been reversed and the ring rail was moving off the bobbin former more quickly, we were able to have a more rounded bottom on the bobbin than we had before. The increased lays per inch also made the bottom of the bobbin larger and prevented rolling of the yarn because the yarn was packed more tightly.

By trial and error we determined picks and the proper chain length from the pulley to give us the desired taper and stroke. We increased our bobbin weight several times during the experiments by just changing the lay gear and not the stroke or picks.

System Was Then Applied To Other Yarn Numbers

Using the lay gear we found suitable for 15s as a basis, we then determined by ratio and proportion lay gears for yarn numbers from 5s to 30s. Now we know the proper lay gear for any yarn number we can spin.

Yarn Number	Diameter (in.)
6	0.0156
8	0.0135
10	0.0121
12	0.0111
14	0.0102
16	0.0096
18	0.0090
20	0.0086
25	0.0077
30	0.0070
40	0.0061
50	0.0054
60	0.0050
70	0.0046
80	0.0043
100	0.0038

YARN DIAMETERS can be determined from this table. These figures are accurate enough for most cotton-type yarns to at least give you a starting point if you want to try these ideas.

How To Apply These Ideas To Make Better Bobbins

It would be impossible to give enough specific information to apply to every mill, but if you follow this general outline you should come up with results similar to ours.

1. Determine your yarn diameter.
2. Determine your desired lays per inch by dividing average yarn diameter into 1.
3. Measure your present lays per inch at the average thickness of the bobbin.
4. Use a ratio to find out what lay gear to use. (Present lay gear × unknown lay gear = Present lays per inch × desired lays per inch).

Since variations in yarn diameter are often 90 to 130% or even more, the above calculations may not give you the right answer. The rest depends on your good judgment. Change the lay gear until you cannot see the bobbin after the first laying-on stroke. Then use ratio and proportion to figure the lay gears for other yarn numbers.

How Avondale Mills Quills, Slashes, and Weaves CORDUROY

▶ Two quillers of 140 spindles each doff an average of 13.82, 2.24-oz. bobbins per min. One quiller adjuster and one operator tend both machines.

▶ A hot-air slasher operated only one 40-hr. shift prepares all warps for 250 46-in. XP looms.

▶ The weave-room production average is 95% and the seconds are 1% for a 2-yr. period. A 1,000,000-yd. order of cloth was woven with 0.4% seconds.

By **RICHARD B. PRESSLEY,** Assistant Editor, TEXTILE WORLD

High production, low seconds, and long shuttle life always go together no matter what fabric is being woven. Corduroy is woven under such rigid controls at the Avondale Catherine plant that the management knows what efficiency and quality to expect before the cloth is woven.

The yarn-finishing and weaving departments are separated only by a partition in the building. The foreman of yarn finishing and the weaving foreman confer frequently on all manufacturing processes so that yarns are made for good weaving conditions.

Quilling

Do You Handle Quillers This Well?

Catherine has two Abbott quillers of 140 spindles each. One quiller doffs 13.78, 2.24-oz. bobbins per min., and the other machine doffs 13.86 bobbins per min. for an average of 13.82 bobbins per min.

One operator tends both machines. Her duties include creeling and piecing up ends.

A quiller adjuster, the equivalent of a section man, oils, cleans, and fixes the machines.

Abbott Machine Company's maintenance specifications are used to keep quillers in good mechanical condition.

Check the Frames Each Day

This is the daily checklist for frame and traveling-unit parts:

1. Blow off all outside surfaces of the quiller.
2. Blow accumulations of lint from around the traveling unit, brush, block, and springs.
3. Remove all thread waste from behind the chucks.
4. Replace broken or lost detector-wire and thread-guide eyes.
5. Replace worn or lost drive washers.
6. Check all thread-guide post rollers for wear and positions.
7. Replace weak springs on the drag link.
8. Clean and check the brush levers.
9. Check the tension weights for position and number of weights.
10. Check for soft or odd-size bobbins.
11. Replace worn feelers and feed racks.
12. Reset feelers and feed racks that are out of position.
13. Wipe off the rails and track, and oil them lightly.
14. Check and oil the variable-speed sheaves.
15. Check the brake and clutch. Reline the brake band, if necessary.

Keep the Heads Working

This is the daily checklist for automatic-head parts:

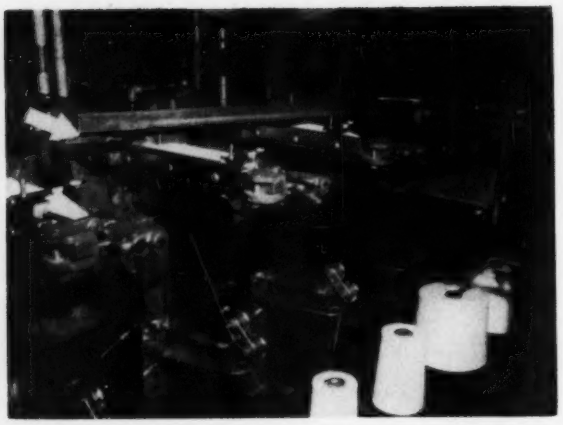
1. Check air-jet cleaners.
2. Have the air line free of water.
3. Question the operator frequently to see that the quiller is operating correctly.
4. Check the number of bobbins doffed per minute.
5. Check bobbins for correct chucking.
6. Check the bobbin-end yarn-cutter blade and spring blade for sharpness and for correct cutting.
7. Check the waste-end remover.
8. Check the tail cutters.
9. Check the hopper-slide parts and remove waste from the shafts.
10. Clean and oil the bobbin-slide-arm studs.
11. Oil the upper-sprocket stud in the hopper slide.
12. Oil the hopper-slide pinion-gear stud.

Remove Worn Parts

The monthly checklist includes:

1. Check the drag-link plates for straightness.
2. Check the drag-link-stud insulator for position and mechanical condition.
3. Check tension disks and sleeves for wear. Replace worn tension disks, sleeves, and felts.
4. Check detector-wire bearings for wear and for tightness of screws.
5. Check the mechanical condition of the copper track on the drive end and the

UNITS ARE COMPLETELY DISASSEMBLED, cleaned, and rebuilt at a workbench. Since the units are reconditioned so often, cleaning and inspecting is the biggest job.



HANGING OF BOBBINS when they are doffed is eliminated by the use of this bar that forces the feeler to the end of the full bobbin. The feeler completely clears the bobbin at the doff.

return end; and set the track ⅜ in. below the top rail.

6. Check all supply-package brackets for tightness and square them.

7. Check the knock-off rod for straightness and for correct settings.

The weekly checklist is a combination of the daily and monthly checklists.

Overhaul All Units

During every 6-mo. period, each unit is disassembled and rebuilt. In addition to this maintenance work, a 6-mo. checklist includes:

1. Check the records to be sure all units have been overhauled during the 6-mo. period.

2. Check the oil seal of the worm-gear unit for leakage and check the parts for wear.

3. Inspect and clean the sprocket internal gear and pinion. Put on fresh grease.

4. Disassemble the clutch and replace the cork disk if necessary.

5. Loosen the chain and check the sprocket studs for wear.

6. Inspect the linkage of the traverse speed-change assembly.

As a result of Catherine's maintenance methods, few machine breakdowns occur, and little fixing is necessary.

Slashing

Compare Your Slasher Methods With These

J. E. Mitchell, weaving foreman at Catherine, says, "Our hot-air slasher does the best job of preparing sized warps I've ever seen. The warps weave through the shed packed in at 140 to 160 picks per in. without any trouble."

Pearl starch is prepared in a stainless-steel cooking kettle, pumped to a Gaulin homogenizer, and then stored in an insulated stainless-steel storage kettle.

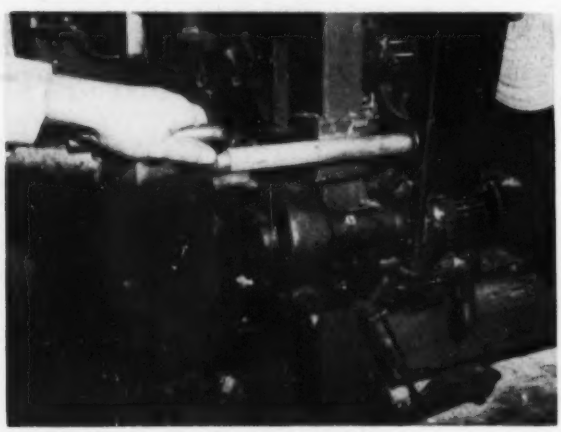
After more than 2 yr. of operation, the homogenizer has required no repairs of any kind.

The sizing material is circulated through the size box on the slasher and constantly recirculated through the storage kettle. Liquid level in the size box is held constant with Brown controls.

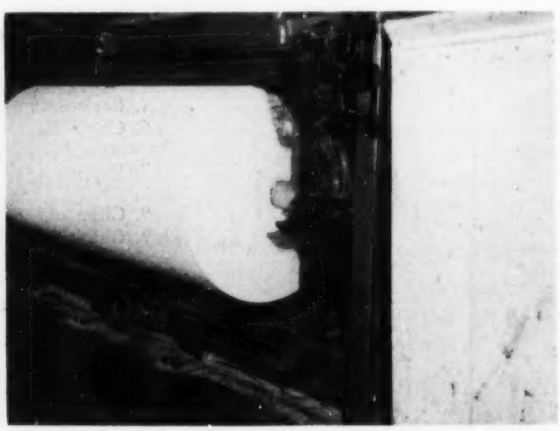
Warper beams contain 35,000 yd. of 30s yarn. Loom beams of 26-in. diameter contain 2,800 to 3,000 yd.

Slasher Can Run 75 Yd. per Min.

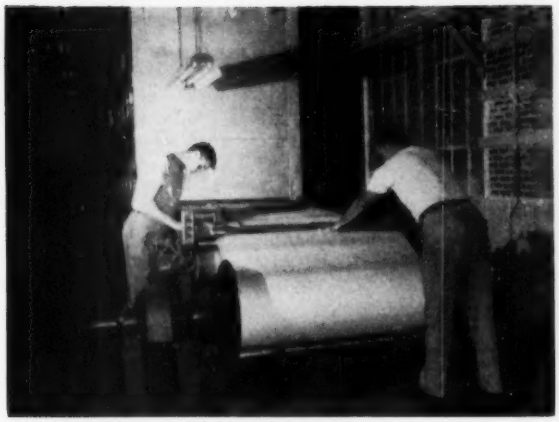
Since the slasher production at 40



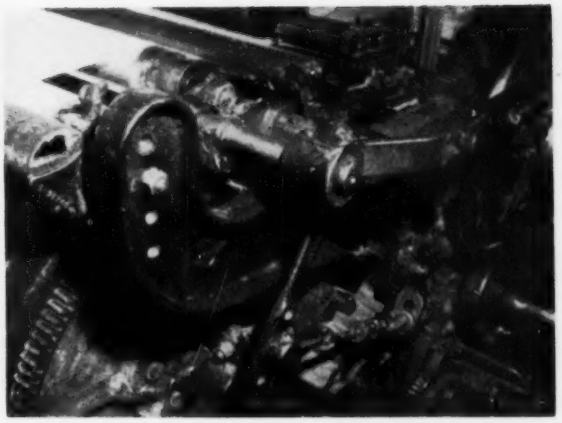
AVONDALE'S SPECIAL ATTACHMENT makes it possible to pull over warps tied at the loom with portable tying-in machines in just 1½ min. The crank turns inside a pipe and turns the pinion gear.



UP TO 600 YD. of cloth are woven before the roll is doffed to make it easy for the cutting-machine operator to cut the wales without resetting guides at slams.



THE SLASHER IS SO EFFICIENT that it has to be operated only one shift. Elliott Hickey and I. D. Haynes keep the slasher running almost constantly.



TO REDUCE BEAT-BACK that might result from the high number of picks per inch, it is necessary to use two drag rolls, an auxiliary roll, and the regular vibrating whiproll.

yd. per min. is high enough to supply the weave room with warps, the slasher speed has been reduced from 75 yd. per min. At the higher speed, warps were slashed satisfactorily for weaving.

The last check on warp stretch at the slasher showed 3.39% stretch between the back and front rolls. The slasher is equipped with a Westinghouse multimotor drive. Yarns are run as slack as possible through the size box without being slack enough to roll in the dryer.

Squeeze rolls are covered with two ends of wool ply yarn and one end of 8s cotton. It is necessary to add yarn to the squeeze rolls only every second day because the slasher operates only one shift. Cost of squeeze-roll covers has been reduced by 25%.

A revolving single split rod is used in front of the size box to separate the yarns.

Warps are usually leased at the end of each warp. If trouble occurs, warps are leased more often.

When warps are doffed, kraft-paper slasher tape is used to seal the ends of the yarn. The slasher operators, I. D. Haynes and Elliott Hickey, believe they can doff a warp faster with this type of tape. Warps are doffed with a ½-ton hoist mounted on an overhead track.

The flame in the air dryer is controlled and the slasher speed is constant. A Moist-O-Graph controls the moisture content of the warps. The cooking and storage kettles are also controlled by Brown instruments.

The slasher chambers are blown down once each week with an air hose. The first two carrier rolls of the dryer located next to the size box are cleaned when each section-beam set is out. That's all the cleaning of the air-drying equipment that's required.

The hot-air oven was manufactured by The McConnell Co., Birmingham.

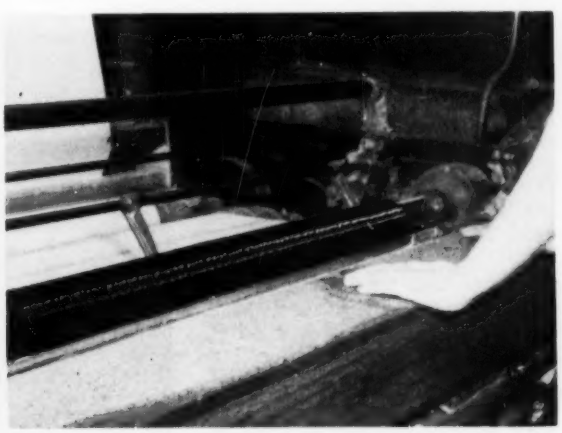
Weaving

Here's How Catherine Weaves Corduroy

Weaving methods at Catherine aren't much different from those of most other weaving mills, but the results are certainly different. The weave-room men at Avondale just do the things they know to be good weaving practices and then follow them up. The results are 95% production and less than 1% seconds.

(*Continued on page 218*)

IT'S JUST A FEW STEPS from this cloth-grading machine to the looms. Cloth burler, Ivey Smith, shows a cloth defect to James E. Mitchell, weaving foreman.



DOZENS OF ROTARY KNIVES cut the wales in the cloth to form the corduroy pile. Split guides hold the revolving knives in the center of each wale.

1 PREBOARDED STOCKINGS are laid out in 1-doz. batches and folded three times. The preboarder makes the first fold by folding the toe to the welt.

2 A 5-DOZ. BATCH is placed in the dye bag that is stretched over an iron ring fixed to the bench. Care is taken not to disarrange the folds.

How a Full Fashioned Mill Cut Its

- **A new boarding machine at an Ontario mill has cut boarding costs considerably.**
- **The mill emphasizes these points for successful operation of the machine—**
  - **> Pack hose in dye bags with care**
  - **> Use less finish**
  - **> Extract for a longer period**
  - **> Stress boarding-team cooperation**
  - **> Store for 24 hr. before pairing**

By JAMES H. BLORE
Assistant Editor, TEXTILE WORLD

BY INSTALLING A NEW boarding machine, National Hosiery Mills, Hamilton, Ont., has cut its boarding costs by reducing its labor force. Five girls are now doing the work formerly done by 10 girls.

To get the best results from the Smith-Drum machine, special methods have been adopted in preboarding, dyeing, extracting, and storing.

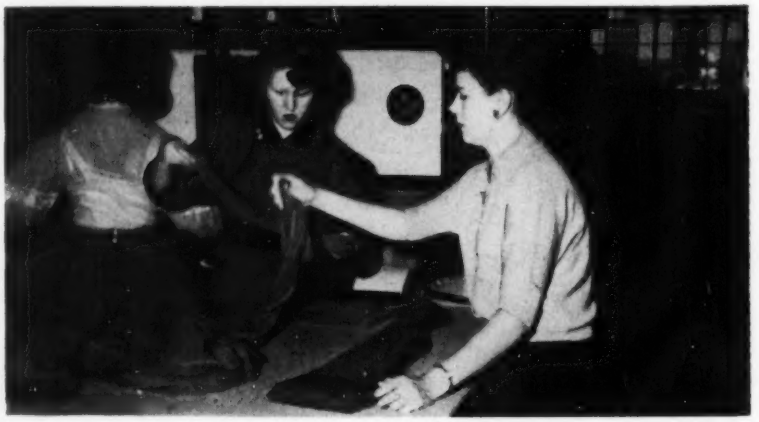
Preboarder's Job Is Important

As the stockings are stripped from the preboarding forms, they are laid out flat in dozens and folded three times. The toe is brought up to the welt, and the second fold is made by bringing the knee over to the welt. The third fold is completed, and packs are stacked five high.

The folded packs are placed carefully into the dye bag, which is supported in a wire loop fixed to the preboarder's bench. The dye bags are closed with knitted bands of various colors to denote each size.

Less Finish Is Used

Different finishing formulas are required for this new system of boarding. National uses less finish on the goods that are processed on the new machine. Such finishes as Dull X-L,



4 EACH DOZEN is straightened out by Betty Ciancone and Margorie Agnew. The piles are passed to the girl in the rear, who lays them on the conveyor in 1-doz. lots.

3 THE DYED STOCKINGS are tipped out of the dye bag onto the boarding table after sorting according to size and order number. The bags have been stored in plastic containers to keep the stockings moist.

BOARDING Costs

Dura Beau S.M., A.T.E., Duratone, and Ingertex give good results.

The stockings are extracted for a longer period than if they were being processed for conventional boarding.

Stockings Are Kept Moist

No time is lost between extracting and boarding. The first member of the boarding team acts as a receiver. When the stockings come from the dyehouse, she sorts the bags according to their size and order number.

Order lots are then placed in plastic bags to keep the stockings moist. A ticket showing color, size, and number of stockings is placed in each batch. Racks marked with each size hold the plastic bags until they are ready to go to the boarding machine.

The girl who acts as receiver takes the stockings out of the dye bags in their sets of twelve. She passes them on to the two girls stationed at a smooth-topped table at the end of the boarding machine.

Careful Straightening Is Essential

The two girls at the table are assisted by the first girl when she has caught up with her sorting duties. The two girls:

1. Straighten out the stockings
2. Smooth out the heels and toes
3. Stretch the feet
4. Stretch the legs
5. Straighten out the welts by banging them on the counter
6. Fold the toes back to allow for a better grip to lay them on the conveyor
7. Lay out the stockings in 8-doz. lots
8. Slide each pile over the table to the boarding-machine loader

The loader at the feed end of the machine lays each dozen on the conveyor belt. The welt is gripped in the left hand, and the toe is stretched and straightened as it is laid on the belt. Dozens are laid side by side so that the welts touch.

The speed of the conveyor is set at 4½ ft. per min. The temperature of the drying oven is controlled at 210° F.

Each Dozen Is Checked for Size

The stockings are stretched to size as they are taken off the delivery end of the machine. The size is checked by the narrowing marks in the heel fashioning. A scale is marked on the table that the goods are laid on.

The dye bag with the batch ticket is laid out on the conveyor at the completion of each batch. When the dye bag reaches the delivery end of the machine, it is dry and ready for further use. A record of each batch is kept by the girl who removes the stockings from the machine.

Two stacks are placed together to make a batch of 1-doz. pairs. These 1-doz. lots are folded in half and placed on a tray. The trays containing up to 10-doz. pairs are stored in racks in the boarding room at least 24 hr. before final pairing.

Special care is taken in selecting girls to operate the machine, as one faulty member can spoil the whole production. Unmarried girls of the same age are preferred by National.

An incentive system is in operation to increase production still further as the team becomes more familiar with its work. Each time production exceeds a certain figure and the figure is maintained, all members of the team get an increased hourly rate.

The weekly goal for the team, set by plant superintendent E. Clements, is 7,200 doz.

5 BOARDED STOCKINGS and empty dye bags come through the machine. Terry Clements pulls each dozen to size, places two dozen together, and folds them in half.

How To Get The Most From A Small-Plant MAINTENANCE Crew

▶ **Small-plant maintenance men have to "double in brass"; they can't afford a specialist in every field. To make up for that lack, they should, among other things—**

Take advantage of outside skills

Learn how to train workers and keep records

Set up a good system and see that it works

By WALTER E. ADAMS

THE MAINTENANCE OPERATIONS of small plants are more difficult than the operations of a large plant because the same problems must be solved by both, and maintenance supervisors in small plants seldom have a staff of experts and specialists to advise them.

The maintenance supervisor of small plants must be intimately familiar with all the physical assets of his plant, all the manufacturing processes, and all the services he must provide to keep all the departments of the organization working at peak production.

Employ Specialized Knowledge

Since the jobs he must do are widely diversified and since he cannot become a specialist in every field of his work, the maintenance supervisor of a small plant must employ specialized knowledge from a broad field of engineering if he is to successfully direct his maintenance operations. How can he employ specialized knowledge?

1. A small crew must use outside services. One of the most direct methods is to use the services provided by the manufacturers of machinery or equipment. More and more the salesman who visits a plant is an experienced engineer who knows his product completely and is willing to assist with its selection, utilization, and maintenance. His company can usually supply technical information and assistance without cost.

2. A file of technical information is a great aid to maintenance men. Technical books and articles in maintenance periodicals are an excellent source of information. Articles with potential value that cannot be read immediately should be filed for future reference.

3. Plant-engineering clubs should be organized in your locality. The personal interchange of ideas is always valuable to maintenance supervisors because the benefit of collective thinking can be gained.

Another advantage of club organizations is that they encourage visits to other plants. Visits to larger plants are always advantageous because their greater experimental possibilities usually result in the most up-to-date maintenance methods.

4. Hire consulting experts such as heating engineers or laboratory testing organizations, when necessary. Use them as much as they're needed—but don't sit back and relax while they do your thinking; there's danger in that practice.

Use Sound Judgment

Books on maintenance subjects often have general applications. Maintenance periodicals often describe a specific method used in another plant and may require modification to suit your conditions. The outside sales engineer is pushing his own product. The consulting expert does not know your plant as well as you do. For these reasons, you must rely on your own judgment and resourcefulness to adapt information from these various sources to your own operation.

A good maintenance supervisor must:

1. Interpret what he reads to make it fit his requirements
2. Judge what he hears to determine its suitability to his needs
3. Guide the consulting expert to the correct analysis of his problem

To do these three things does not require a detailed and exact knowledge of all the engineering principles involved, but it does require a sound judgment and basic understanding of fundamental engineering principles and techniques. Such ability, combined with the "special" staff of experts, will result in the operation of a maintenance department with efficiency and relative ease.

Use Production Workers

It's difficult to find a suitable maintenance worker for a small plant because he must do so many types of work. For example, one mechanic often has to be familiar with all the types of machinery in his plant and, in addition, be a welder, painter, and carpenter.

Since much of this work can be planned, it can be assigned to regular mill-production workers. They can do the work under the supervision of the maintenance department during slight lulls in their production schedules, which may range from only an hour to one or two days. In this way, the skill of a specialist is employed where normally a general-maintenance worker has to be used.

Such a method also helps balance the production load by filling slack-time periods with maintenance work.

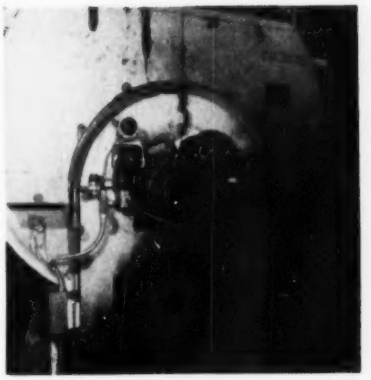
(*Continued on page* 186)

Walter E. Adams is the maintenance engineer of J. M. Lehman Co., Inc., Lyndhurst, N. J. This article is based on his talk at the Plant Maintenance Conference held concurrently with the Fourth Plant Maintenance Show at Cleveland, Ohio, Jan. 19-22.

ORGANIZED MAINTENANCE
At Henderson Cotton Mills

▶ Henderson Cotton Mills, Henderson, N. C., is operating 34,704 spindles and 224 looms with only eight maintenance employees. And soon 9,396 more spindles and 224 more looms will be serviced with the same crew. Well-trained maintenance employees and modern maintenance equipment keep the labor, equipment, and repair cost at 1% of the total plant-operating cost.

By **RICHARD B. PRESSLEY,** Assistant Editor, TEXTILE WORLD



AUTOMATIC CONTROLS keep this oil-fired boiler operating constantly with little service. When the output of this boiler reaches 95% of its rated efficiency, a second boiler automatically turns on to boost the steam to the required amount.

THE MASTER MECHANIC at Henderson Cotton Mills heads up the maintenance department. The department's eight-man crew is composed of:

1. One machinist
2. An assistant machinist who also serves as a second hand
3. Two mechanics—one on the second shift and one on the third
4. One man to care for humidifiers
5. One oiler
6. One floor polisher
7. One janitor

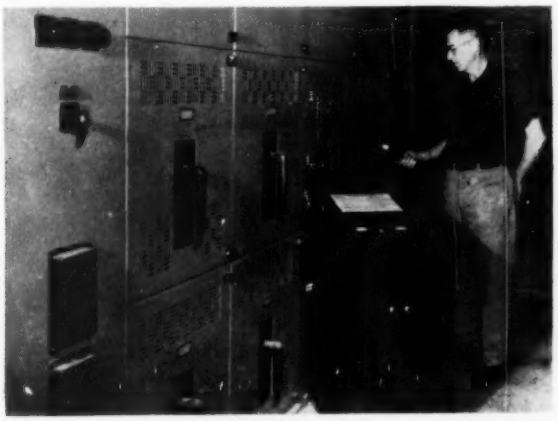
The maintenance department cares for the entire building; 13 mill-owned village houses; three air compressors; all air lines; three boilers; all electric wiring, switches, and motors; all humidifier lines and heads; floor maintenance (repairs and refinishing); overhead cleaners; slasher controls; and janitor service.

In addition, the master mechanic has charge of the supplies for all departments and the three-man, three-shift-operated supply room; but the supply men's wages are not charged to the maintenance budget.

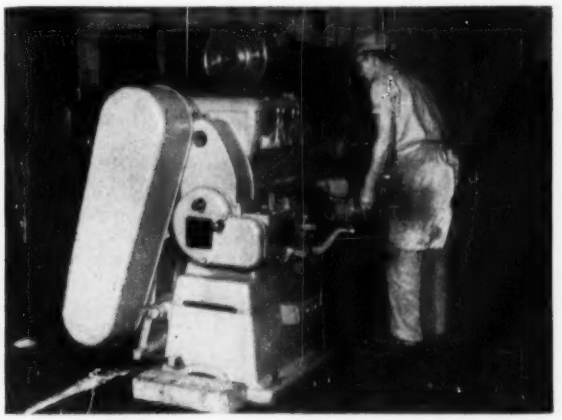
Who Decides When Money Is To Be Spent

The master mechanic sends all normal orders for supplies to the mill superintendent. He also works directly for the superintendent. Requests for maintenance equipment, such as a new lathe, are routed through the superintendent to the vice presi-

(*Continued on page 194*)



THIS ALLEN GROUND DETECTOR locates a ground in less than 30 min. while the plant is operating. The circuit is closed only to repair a ground. A ground used to cost as much as $300 when the full maintenance crew had to trace out each wire to find the trouble.



THIS NEW LATHE can do any large job. Standard card lickerin pulleys are often turned down in outside diameter 0.128 in. to reduce card speeds from 183 to 180 rpm. An overhead hoist on a track permits one man to change heavy chucks.

Chemical Modification of Cellulose

▶ Aquex, Avcoset, and X-2 have been trade-tested for some time. For adding dimensional stability to repeated washing, each treatment has merit.

By **ARTHUR R. WACHTER,** American Viscose Corp.

RAYON IS WOVEN into fabrics as fine as spider webs and as heavy and full as carpets and rugs. The fibers have properties different from any in nature. Special synthetic chemical products have been found to be a valuable means of producing new types of materials by conferring some property or characteristic not inherent in the fiber itself.

Many yards of rayon fabrics have been sold as washable, and most of these were carefully and properly processed with fast dyestuffs; but as a means of stabilization, urea or melamine resin was used. Fabrics so processed were washable only so far as color was concerned but were not at all fast as far as shrinkage was concerned.

These resins, when properly applied, are an excellent means for imparting crease-recovering properties to rayon fabrics that are used in garments not intended to be laundered. Since we now have positive chemical methods to induce permanent shrinkage control, urea or melamine resins should not be used on fabrics sold as washable. These resins are chlorine retentive and are not at all durable to laundering; after a few launderings, the resin bond is broken and an excessive fabric shrinkage occurs.

Today, we can not only dye but also chemically finish rayon fabrics to be absolutely and positively shrink resistant by the three processes under discussion. Many laboratory tests and wear tests are now testifying to a shrinkage of less than 2% after as many as 50 repeated launderings. Fabric treated with either Aquex, Avcoset, or X-2 are nonchlorine retentive, and any one of these stabilization methods prolongs rather than shortens the life of the cloth.

Aphabetically, to give equal prominence to each, the methods will be discussed as to nature, methods of application, and claims of the sponsors.

Aquex Resins

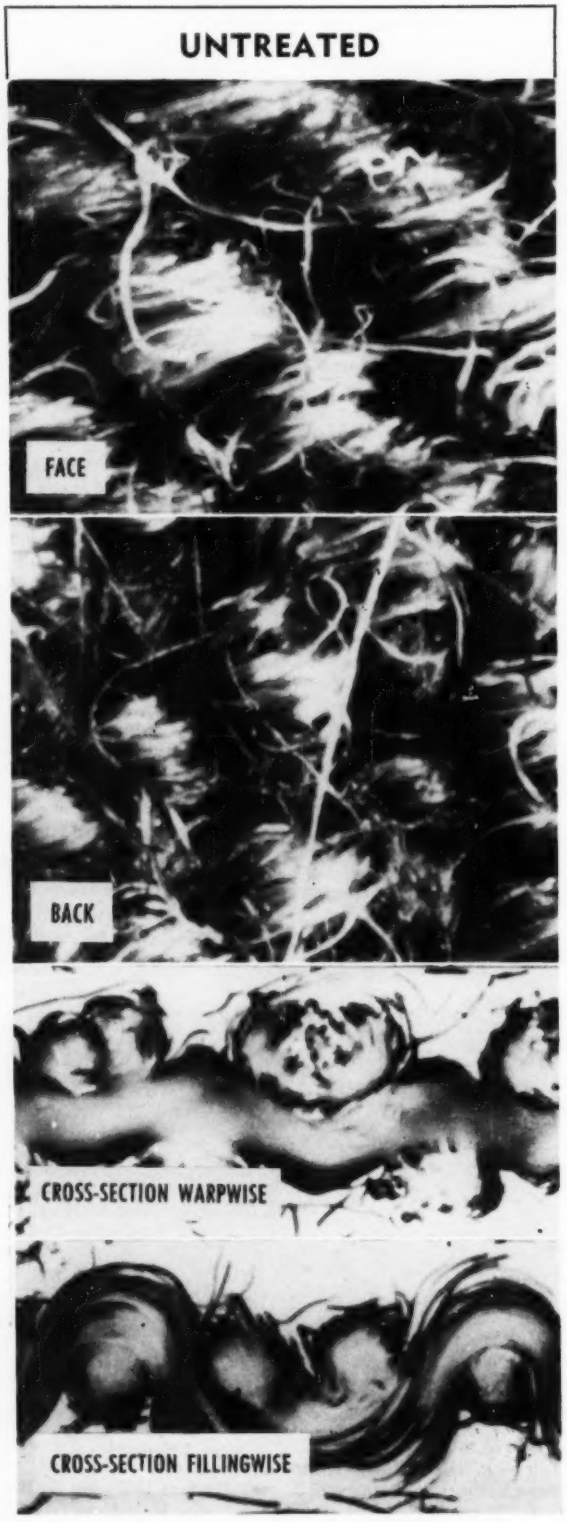
Aquex resins are chemically classified as chelated vinyl acetate copolymer complexes. [See TW, April, '53, p. 76.]

The application, according to the manufacturer's instructions, requires no equipment other than that now in use in finishing plants doing urea or melamine-resin applications. The chemical preparation and its application are very simple and require no special high-priced talent. Aquex treatment is, however, a precise operation; and therefore it does require accuracy in handling.

Aquex is said to offer permanent shrinkage control—a residual of less than 2% and so permanent that even

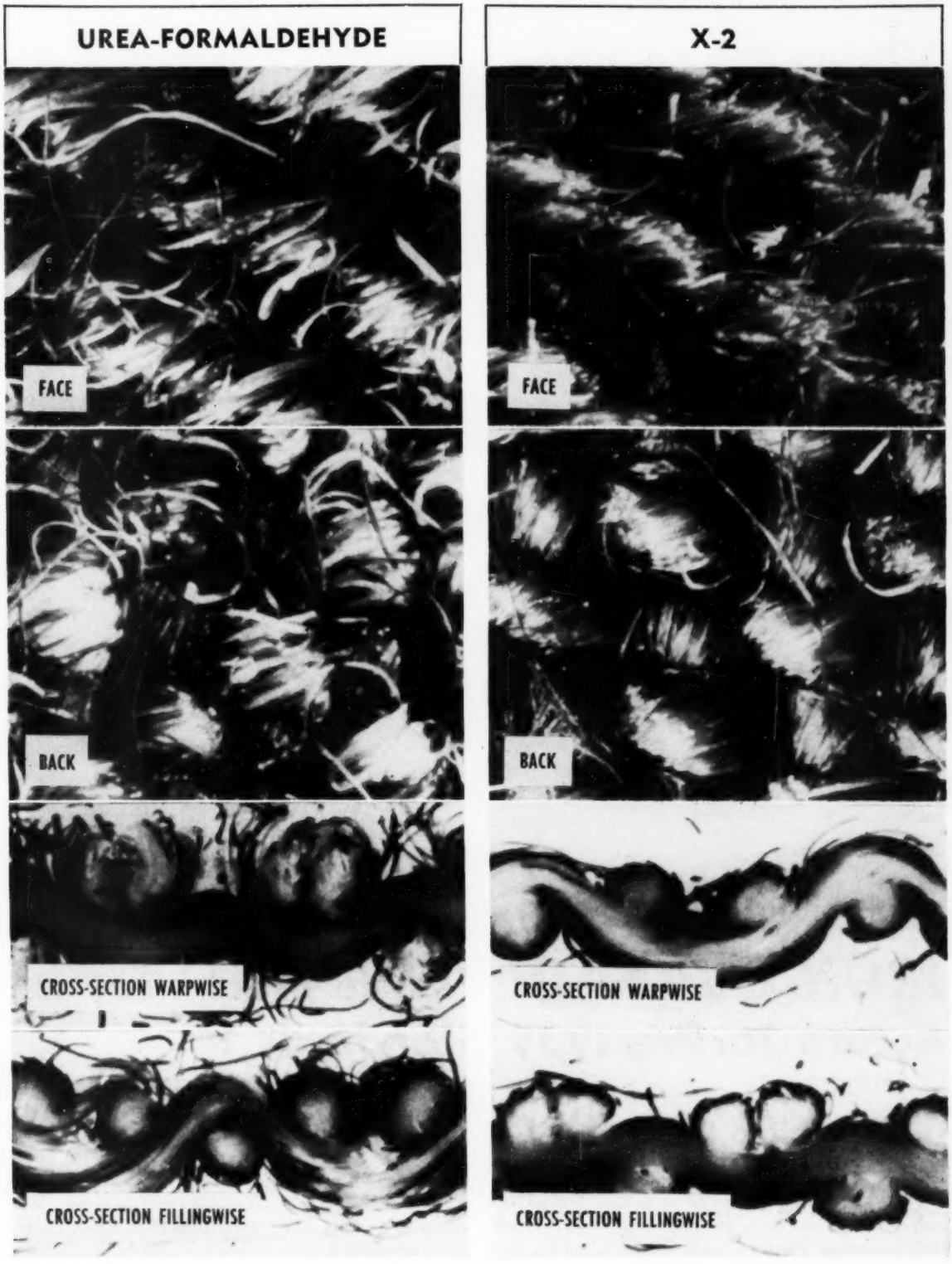
(*Continued on page 224*)

Condensed from a recent paper delivered before the AATT at the Builders' Club, New York, N. Y.

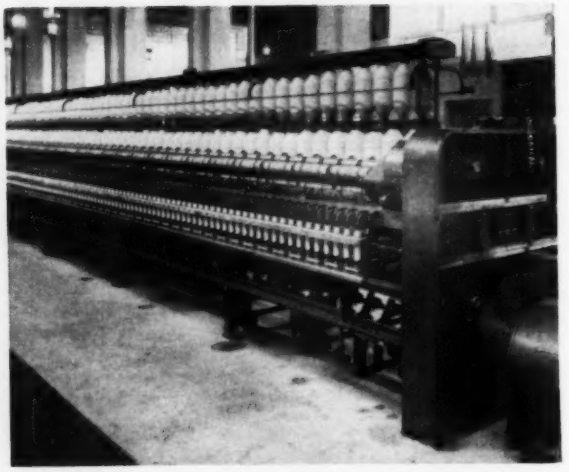


RELATIVE RESISTANCE to wet abrasion of spun-rayon fabric treated with conventional urea-formaldehyde resins versus X-2-treated and untreated cloth is shown in these 50X photomicrographs. *(Courtesy Dan River Mills, Inc.)*

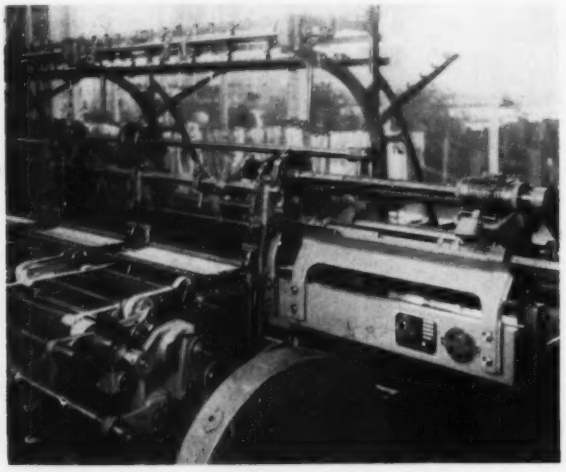
Aids RAYON STABILIZATION



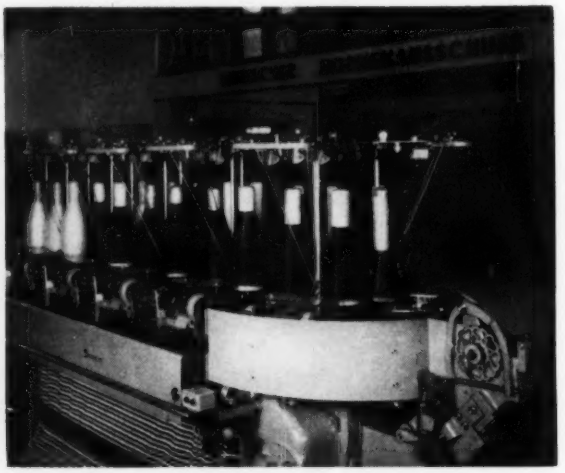
COTTON COMB of improved design is expected by a satellite country (Bulgaria) to "increase yarn production by 26%," according to the accompanying bulletin board.



RING SPINNING FRAME from Shanghai has 400 spindles. The 1950 model is said to be based on older Japanese equipment, with some improvements added.



FULL-FASHIONED KNITTING MACHINE manufactures 60-gauge hosiery at a production rate of 80 courses per min. It is a 24-section machine that completes its knitting cycle in 40 to 45 min. Manufacturer is Textima.



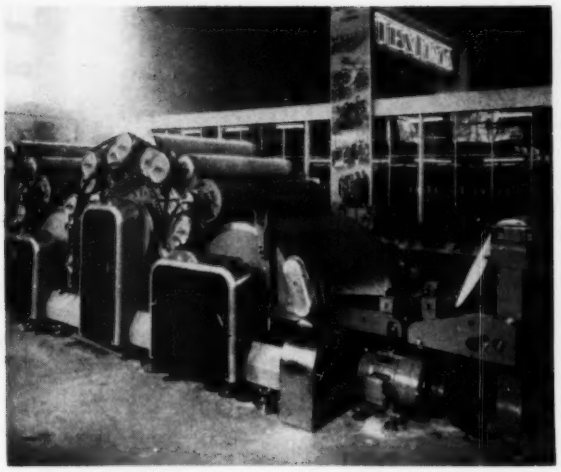
FLAT-KNITTING MACHINE claimed to be five times as efficient as former models is made by Elite-Diamant Works in East Germany. With a rotary cam movement instead of a reciprocating cam motion, the unit is designed to produce "118,000 yd. per year."

IRON CURTAIN Textile Machines Return to Pre-1939 Standards

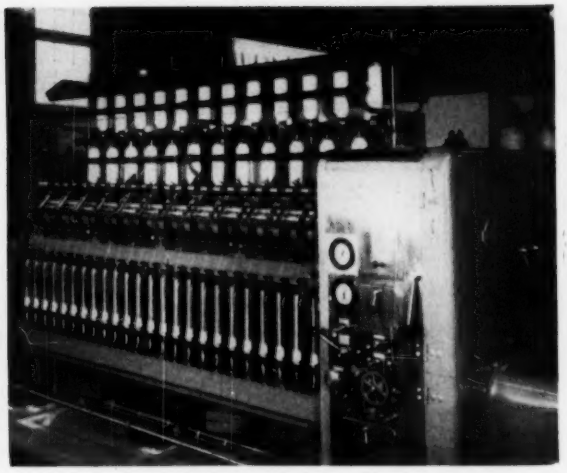
• The recent Leipzig Fair in Eastern Germany was a good place for the West to get a look at Soviet-controlled textile-machinery progress.

• The East Germans, in control of most of prewar Germany's textile-machinery-building firms, have brought their production standards up to pre-1939 and are constantly improving. State control, of course, is general.

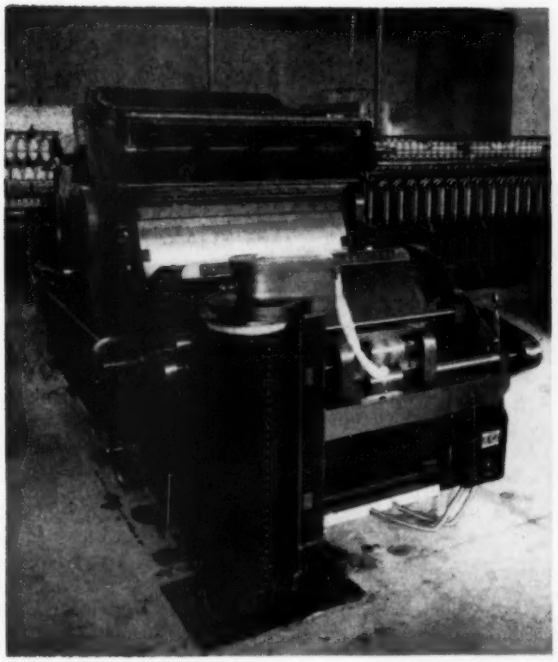
• Sales of the equipment are primarily to the Soviet Union and the satellites, although the East Germans would like to crack Western export markets too. Some equipment is also being manufactured in China for the Far East market.



TWO CYLINDER WORSTED CARD manufactured by Textima in Chemnitz, East Germany, is said to have an improved drive that speeds up production. Components can be stopped off separately or together.



WORSTED RING SPINNING FRAME made in a 48-spindle model by Textima Spinning Machine Works, a state-owned organization, is driven by disks instead of the conventional tapes or bands.



A 40-IN. CARD manufactured in Communist China is understood to be a composite of British designs. It was made at Tsingtao and is the 1952 model.

WARP KNITTER is equipped with stop motions that allow a hole only ⅓ in. long if an end breaks, instead of the 2⅓ in. that previously resulted. *(Textima).*

TECHNICAL HIGHLIGHTS of the textile machinery shown at the recent Leipzig Fair include the following:

A ring spinning frame has a moving spindle rail instead of moving spindles. It produces bobbins up to 11 in. long by 4 in. in diameter. Broken ends are removed pneumatically. Four spindles are driven together. A centralized-lubrication system is provided for.

A felt-drying machine is claimed to eliminate two operators formerly considered necessary. Each heating component, equipped with an electrical blower, has an individual motor.

Sewing machines in several new models are on the market. Yet a considerable degree of standardization is noticed: 70% of the individual parts for the five models are interchangeable. Models are (1) a single-needle machine, (2) a double chain-stitch machine said to run 3,500 stitches per min., (3) a two-needle model with a needle spread from 0.14 to 0.17 in. designed to run 3,500 stitches per min., (4) a three-needle machine with a differential overfeed, and (5) an enclosed zigzag stitcher made to sew as high as 2,500 to 3,000 stitches per minute.

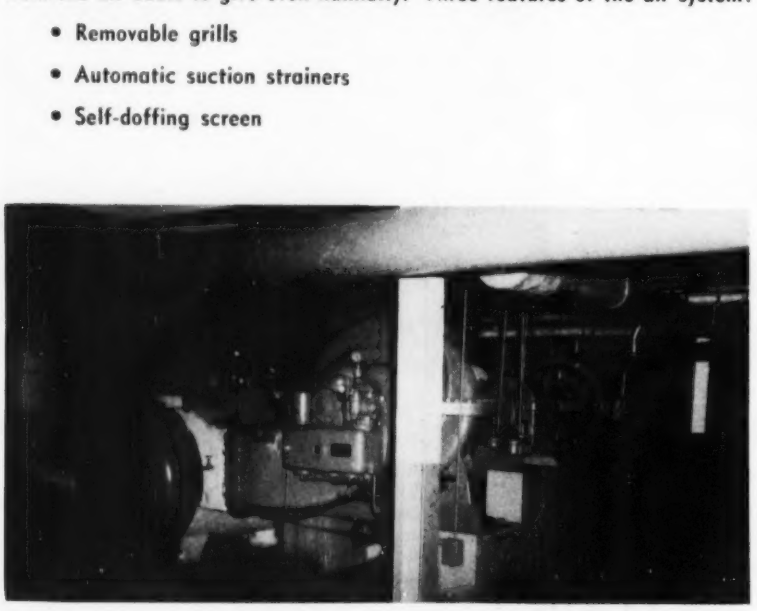
ATOMIZERS (arrows) are located away from the grills in the spinning room. This arrangement prevents a condition of lower humidity below the ducts. The grills are removable for cleaning the inside of the duct units.

At Beaumont Mfg. Co.—

REFRIGERATED-AIR System Improves Carding and Spinning

▶ An 875-ton automatically controlled refrigeration unit supplies cooling water for a six-station 400,000-cfm. air system. The atomizers are away from the air ducts to give even humidity. Three features of the air system:

- Removable grills
- Automatic suction strainers
- Self-doffing screen



REFRIGERATION is supplied by this 875-ton Worthington refrigerating unit located in the Beaumont basement. The unit starts when the wet-bulb temperature hits 60° F. and stops at 59° F.

By E. DALTON WHITE,
McGraw-Hill Atlanta Bureau

Beaumont Mfg. Co., Spartanburg, S. C., is getting excellent results from its refrigerated air system in the cotton carding and spinning departments.

Relative humidity in the spinning area is maintained at a constant level, but the level varies with the type of yarn; the average is 54%. The card room is maintained at 50%, and the drawing and slubber room at 56%. Temperature is kept at 80° F. Air is changed every 7 min., which is frequent enough for efficient operations and employee comfort.

Since the system was installed, Beaumont has noted a decline in absenteeism during hot weather. Production efficiency has increased, seconds have dropped, and fewer ends are down. The familiar "tear-up" days, when everything seems to go wrong, have disappeared since the installation of refrigeration.

Atomizers Are Away From Ducts

An old humidity problem was solved

at Beaumont by placing the atomizers out in the room away from the ducts.

The conventional system places the atomizers at the outlet grill; and with this system, the humidity under the ducts is usually lower. With the atomizers away from the air duct, the humidity is more uniform. Some of the atomizers spray toward the ducts, but the atomizers are carefully placed to keep the air currents from disturbing the spray.

Controlled Inside Temperature

Evaporative cooling is automatically supplemented by refrigeration if conditions warrant. When the outside wet-bulb temperature rises to 60° F., the refrigerator system starts; when the wet-bulb temperature drops to 59° F., it stops. With this automatic control, a change in outside temperature does not affect inside air conditions.

Refrigeration equipment is installed in the basement of the mill. An 800-hp. Allis-Chalmers variable-speed motor drives the compressor and indirectly controls the temperature of the water. Freon 11 is used in the 875-ton refrigeration unit, and a water tower on the mill roof cools the freon condenser water.

The average load of the compressor is 6° F. across the chiller with a full mill load. Water is sent to the mill units at 50° F., and the return water shows a high of about 57° F. Water is delivered to the mill stations at a pressure of 48 psi., and the return water is at 29 psi. Sump pumps return water to the cooler.

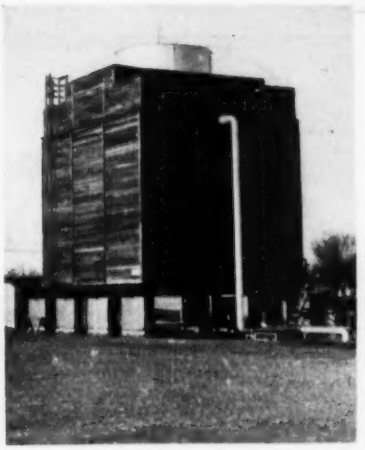
Each Floor Has Three Stations

The new air system handles close to 400,000 cfm. of air. Six stations serve the 9 pickers, 301 cards, 750 drawing deliveries, 26 slubbers, warpers, winders, and 54,000 spinning spindles. The units at each station operate automatically. When refrigeration is required, the cool water flows to the fans. The water is returned for cooling after absorbing the heat from the circulated air. When refrigeration is not needed, the water is circulated within the unit.

Two stations serve the card room on the first floor. The north end has a 25,600-cfm. fan (10 hp.) and the south end has a 66,800-cfm. fan (30 hp.). Another station with a 43,000-cfm. fan (20 hp.) serves the entire drawing and slubbing.

On the second floor, the north end of the warp-spinning room has a 79,950-cfm. fan (40 hp.), and the south end has a 76,000-cfm. fan (40 hp.). The other spinning room has a 104,000-cfm. fan (50 hp.).

THIS SELF-DOFFING SCREEN protects the recirculating openings to the air-conditioning system. The neoprene wiper strips the lint from the 32-mesh Lumite screen. (Waste was thrown on to demonstrate.)



THE COOLING TOWER for the refrigerating system is built on the Beaumont roof. A 30-hp. motor drives the fan on the C. H. Wheeler redwood induced-draft tower. The tower cools the freon condenser water.

Three New Features of System

Three new Bahnson developments are installed in the Beaumont mill: an outlet grill for air distribution, an automatic suction strainer in the air washer, and an automatic self-doffing screen.

Outlet Grill

The outlet grill for air distribution is the double-deflection type with extruded-aluminum blades spaced at 1½ in. The core is easily removed for access to the inside of the duct.

This grill combines the conventional outlet collar that sets the grill out of the air stream and the removable-grill feature that gives access to the interior of the duct for cleaning. This improvement is giving good results at Beaumont.

Suction Strainer

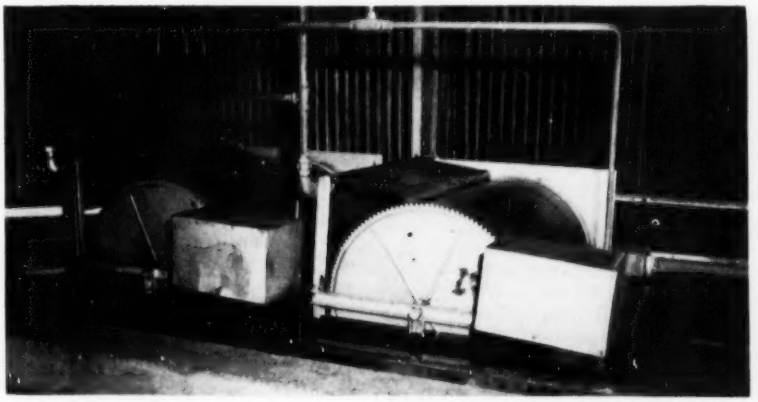
The automatic suction strainer is a self-cleaning rotary strainer for the air washers. It removes lint from the circulated water and flushes the lint away. It collects the dirt on a perforated cylinder, and the dirt is periodically washed into the drain line.

Self-Doffing Screen

The third new development in the system at the Beaumont mill, and the first such installation, is the Bahnson automatic self-doffing screen, which protects the recirculating openings to the air-conditioning system. The unit removes the bulk of the dirt in the air that is returned to the air-conditioning system.

The 32-mesh Lumite screen is

(*Continued on page 200*)



THESE SUCTION STRAINERS take lint and dirt from the air-wash water. The trash is collected on a perforated cylinder and washed into the drain line, and the spray nozzles are thus prevented from getting clogged.

New Machines Dominated Opening and Picking Sections

● Here are summaries of the eight papers presented in the second half* of the Cotton Research Clinic sponsored late in February by the National Cotton Council. This half of the clinic dealt with the preliminary processing of cotton—opening and picking—and there was one report on carding.

New Shirley Opener Removes 66% Trash at 2% Lint Loss

► Shirley Institute's new opener, which is a high-efficiency, low-production cleaning machine, will be available this year

► Details of the intensive research that went into the machine explain why these features are important: lickerin-type beater, no grid bars, pneumatic stripping, automatic waste removal

By **GEOFFREY DAKIN**, Shirley Institute

THE NEW SHIRLEY OPENER WAS developed as an efficient cleaning machine. To fully understand the principles incorporated in the machine, you need to be familiar with the thinking behind it.

Performance of Older Machines Lent Valuable Information

Our work started with a study of the performance of conventional opening-room machinery used in Lancashire 20 yr. ago. Here are our observations, based on statistical treatment of the data:

1. An entire range of conventional opening-room machinery removes about 50% of the trash in a bale.
2. The lickerin-type beater is the most effective beater for opening and cleaning cotton.
3. Some machines remove trash and then mix it back into the stock.
4. Opening is a prerequisite to cleaning, but control of the liberated trash is just as important.
5. The opening and cleaning processes are most effective when the whole job is done in a few steps. Repetition is comparatively ineffective, and different beating actions should be used.
6. A radical change in the principle and form of air currents is necessary to improve the selective action between lint and trash. Difference in clinging power is not enough.

Three Requirements For Effective Cleaning

The requirements to clean cotton most effectively and efficiently are: a highly effective method of opening, use of the fewest possible machines, and control over the liberated trash. That is what we believe we have in the Shirley opener.

It all sounds simple, but it took years of fundamental research and development work to get to the final production model. The first improved opening and cleaning machine we made was the Shirley analyzer, with which, I imagine, most of you are familiar. This, of course, is a testing instrument. In dealing with the production counterpart of the analyzer—the Shirley opener—I should like to give you the background of some of the research and development that went into its present design and finish up with a brief description of the performance and capabilities of the machine.

These Factors Affect Opening

Since opening is the fundamental requirement before cleaning can take place, I shall first consider the more important factors that affect openness. These are:

1. The type and speed of the beater
2. The type of feeding system
3. The conditions of feeding

1. Type and speed of beater

Our mill surveys showed that the lickerin-type beater, used at the card, was well ahead of other types of conventional beaters, as far as cleaning was concerned, because of its much finer opening action. We therefore decided to concentrate on this type of beater for our opener, but we did experiment with other types of covering, including spikes and hooks.

As beater speed increases, so does openness of the delivered material. There is a rapid initial increase in openness with increase in speed up to a speed of about 800 rpm., above which the increase in openness is relatively small. Best results of all are obtained with lickerin wire. The degree of opening obtained with this wire, with optimum conditions of tooth form and speed, is over 90%.

We investigated the effect of tooth density on openness with beaters having up to 50 teeth per sq. in., and we found that when openness was plotted against the product of tooth density times beater speed for a given production, all the points for wired beaters lay on the same curve.

The effect of doubling the number of teeth and halving the beater speed is to leave the degree of opening unchanged.

2. Type of feed system

We tried various types of feed systems, but for practical reasons we chose the pedal feed. Our pedal, however, is of special design.

Great care must be taken to insure that the combing distance or striking length of the pedal (the distance from the nipping

* *Papers from the sessions on fiber testing were summarized in last month's issue of* TEXTILE WORLD.

point to the nearest point of the beater to the pedal) is suitable for the stock processed. Fiber damage will occur if this length is too small, and loss of opening if it is too large. A fine setting of the pedals to the beater is necessary for good opening, and this setting should not be affected by variations in thickness of the feed. We have taken care of both these things in our design of pedal.

3. *Conditions of feeding*

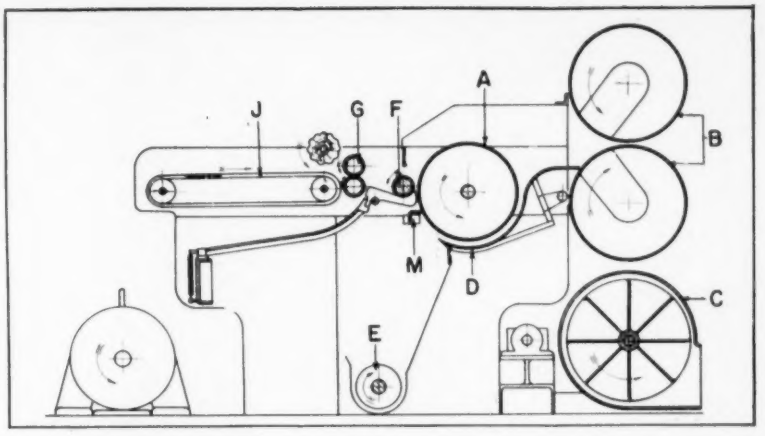
How is the degree of openness affected by such things as the weight, speed, and openness of the feed?

Better opening is achieved by feeding heavily and slowly rather than lightly and quickly. These results were obtained on our opener; but we have no reason to think that they do not apply also at the card.

You would expect a more open feed to result in a more open delivery, and it does.

Two things stand out from our tests on this subject: (1) the large degree of opening achieved by a single passage of bale cotton through the Shirley opener, (from 0 to roughly 90% openness); (2) openness of the feed to the Shirley opener has only a comparatively small effect on the openness of the delivery. Thus for Texas cotton, one passage

(*Continued on page 212*)



THE NEW SHIRLEY OPENER has a 15-in. lickerin-type beater *A*, covered with saw-tooth wire, which turns at 600 rpm. An adjustable sheet *D* replaces the usual grid bars. The cover above the beater eliminates regions of high air pressure and permits stripping of the beater pneumatically. Cages *B* are exhausted by fan *C*.

Cotton is advanced along the lattice *J*, through compression rolls *G*, to a pedal-feed arrangement *F*. Deflector plate *M* is adjustable and plays an important part in determining waste.

Waste is removed by the spiral conveyor *E*.

The opener is said to remove 66% of the waste in stock, at a 2% lint loss, and at a production of 400 lb. per hr. The machine is said to have the cleaning power of four conventional beaters.

New Opener and New Picker Section Coming From Saco-Lowell

▶ The Gyrostatic opener replaces grid bars with revolving, wire-covered rolls, has no cages, and has adjustable centrifugal beater forces

▶ The new picker section likewise has no grid bars and is equipped with fringe rolls

▶ Neither of the developments is as yet ready for sale

By ROBERT M. JONES and ROBERT S. CURLEY, Saco-Lowell Shops

DAMAGE TO COTTON is least when it is opened and finished into laps in the fewest operations, and our new concept of opening and picking is along these lines. Our entire new opening and picking system consists of F7 feeders, the new Gyrostatic opener, a lattice opener, and the necessary feeding devices and condensers to deliver the cotton to two or three F-2 pickers. Each picker has two 16-in. beaters with fringe rolls and revolving grids.

Grid Bars Are Removed In the New Pickers

In our latest design of opening and picking machinery, the grid bars are completely removed. In place of these grids, we have several small-diameter, wire-covered rolls that revolve in the direction of air flow around the beater and have points in the opposite direction to the flow. With this arrangement, the carding beater speeds may be lowered to 500 or 600 rpm. to give peripheral speeds from 2,000 to 2,700 ft. per min. To utilize these revolving grids and slow speeds, the cotton must be sufficiently opened to permit the fiber to remain in the air stream around the beater. This feat is accomplished by placing another wire-covered roll, which we call a fringe roll, immediately below the feed roll.

The fringe roll acts as an important adjunct to the beater where the fibers are held by the evener rolls and pedals, or by two feed rolls, as it helps the beater to pick the cotton clean. The pedals and feed roll are set back to ¼ in. from the beater pins, and the fringe rolls are set up to $\frac{1}{32}$ or $\frac{1}{16}$ in. The fringe roll catches the cotton that escapes from the bite of the pedals and evener roll and holds these tufts for further reduction to minimize the possibility of these bunches passing forward to the bottom screen or to the bottom portion of the lap. Either of these possibilities would contribute to the splitting of the lap or to increased variation in lap evenness.

With a fringe roll, the fringe of fibers coming from the feed rolls is brought up and forward into the path of the beater. As the fibers are prevented from accumulating and as they are detached immediately from the fringe by the beater and carried to the screen section, the lap will be more resistant to splitting.

Immature Seeds Are Removed Before Calendering

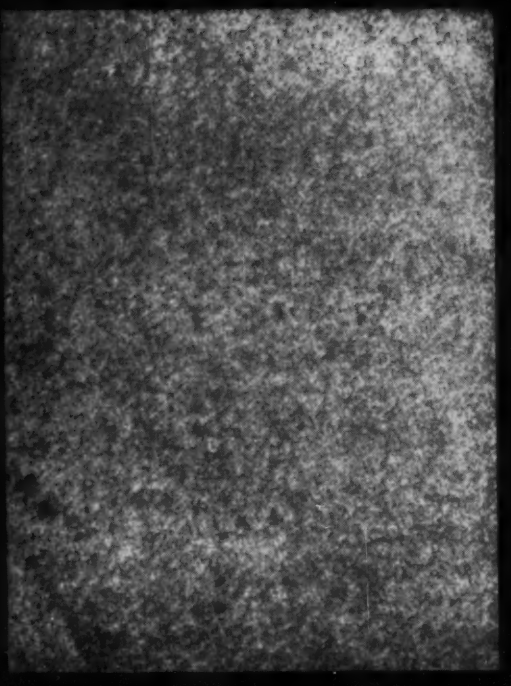
The revolving rolls covered with saw-toothed wire are named Gyrogrids and are so placed that heavy material struck by the beater will fall below the center of the roll and will drop out through the weak air stream. Any fiber tends to cling to the wire-wound roll and is carried back into the path of the beater. With these rolls in conjunction with the fringe rolls, the cotton is completely freed of large bunches of fiber.

Any fibers growing from immature seeds tend to be thrown out without breaking the seed and thus remove incipient seed coatings from the cotton. Because there are no large bunches remaining in the cotton, the speed of the fan can be brought down to the point where the cotton fibers will float in the air stream and up on the screen. The amount of cleaning can be controlled within close limits by varying the fan speed. Lower fan speeds produce more fly and dirt, an adjustment readily adaptable to different characters and grades of cotton.

Because there aren't any bunches, the cotton tends to spread more evenly over

(*Continued on page 208*)

ORDINARY MACHINE OIL. Ultraviolet light proves that ordinary machine oil is hard to scour. Oil that remains in the textile prevents level dyeing.



SUNOTEX MACHINE OIL. Ultraviolet light proves scourability of Sunotex. This oil scours easily and completely, leaves no stain, permits level dyeing.

ULTRAVIOLET LIGHT PROVES SCOURABILITY OF SUNOTEX MACHINE OIL

These swatches were oil spotted: one with ordinary machine oil, the other with Sunotex. After scouring, they both *looked* clean. To make sure, both swatches were photographed under ultraviolet light. The swatch spotted with ordinary machine oil fluoresced brightly, showing that even though it looked clean, it was still badly spotted. The swatch spotted with Sunotex didn't fluoresce, proving it to be oil-free after scouring.

Here's proof of how Sunotex helps prevent spoiled goods and unlevel dyeing. It scours easily, leaves no stain, does not damage fabrics.

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New British Machines Said To Improve Opening and Blending

- Two new British machines, an opener and a blender, are said to blend fibers in an "almost-fluid" state
- The new opener works on the lattice principle and gives an intimate fiber-to-fiber breakdown
- The new blender works on the volume principle and is said to be accurate to 0.7%

By W. A. HUNTER, T. M. M. (Research) Ltd.

NEW LATTICE OPENER is said to comb fiber masses intensively and reduce them to an almost fluid fiber-to-fiber intimacy.

OPENING AND PICKING MACHINERY specifically designed to provide intimate mixing of fibers is becoming available.

Conventional types of machinery—bale openers, blending feeders, and hoppers—will pass the stock forward in uniform quantities, but pieces show considerable variation in weight. Subsequent processing cannot rectify these irregularities, and considerable operator's skill and attention are required right up to the finished drawing sliver.

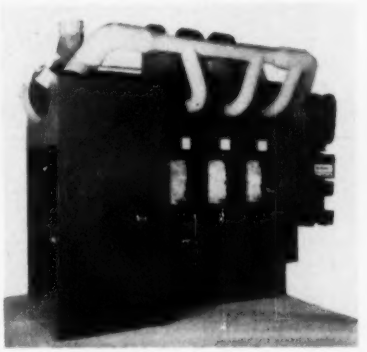
Fiber Masses Must Reach An Almost Fluid State

If short-cut processes are to be used successfully, accurate performance at each stage of processing is essential, for in short-cut layouts the margin of safety is narrowed considerably by the elimination of duplication that undoubtedly masks many errors in present equipment.

Blending depends upon one factor—the breakdown of the masses of compressed fibers into the most minute tufts possible. The material must be brought to an almost fluid state to achieve the most accurate blending. To reduce the stock to a fluid state, without damage to the material, means a departure from the conventional method of opening.

In our research, the principle of combing the fiber mass by means of a spiked lattice had much to commend it, and this principle has been embodied in the machine shown in Fig. 1. The stock is fed onto the open lattice through a feed system and is then intensively combed. The uniformly opened material is ejected into

(Continued on page 210)



NEW BLENDER works on the volume principle, not on weights, and is usable only with thoroughly opened stock.

Consider the Fundamentals In Opening and Picking Equipment

- Opening and picking have never received proper attention in the mill
- Degree of opening and analysis of waste are important measures of machine effectiveness
- Air streams necessary to float and carry cotton also bring along some trash and dirt

By PETER M. STRANG, Whitin Machine Works

TEXTILE MANUFACTURERS have become so accustomed to existing opening and picking equipment that theory and limitations are frequently ignored. Since most mills have, in these processes, a capacity in excess of their regular requirements, limitations in equipment are usually considered in terms of quality rather than quantity of production. Here are some thought-provoking ideas that we in Whitin research have been thinking about.

Opening and Picking Equipment Does Five Things

In this discussion, opening and picking are considered together because these processes are phases in the transformation of cotton from bales into laps for carding.

Opening and picking equipment does five things: (1) progressively reduces the size of the pieces of cotton in process, (2) removes waste and trash, (3) blooms the stock, (4) blends bales to give a more uniform product, and (5) prepares cotton in lap form for carding. A scientific analysis of the first three phases is a dirty, tedius task, but the fourth and fifth phases can be judged in a practical manner by observing the way the spinning room operates and by weighing the laps.

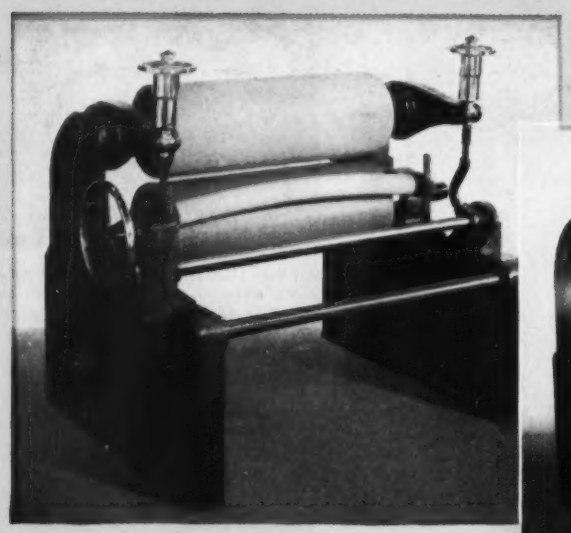
But how can the quality of opening be measured? What is "bloom" in the stock in process? How can the effectiveness of different beaters be compared? How can the quality of the droppings under the various beaters be compared? The need to develop adequate experimental procedures is apparent, and there is a scarcity of units of measurement by which to compare the quality and effectiveness of the different machines.

Does Machine Sequence Make Any Difference?

The sequence of opening and picking units has been established by trial and error over a long period of time in many mills, and it is not practical to consider changing the order of such cumbersome machines as the vertical opener and the downstroke cleaner. While the effectiveness of these units may be compared to a certain extent by the percentage of waste each removes from the total weight of cotton fed, comparisons of this kind require qualification.

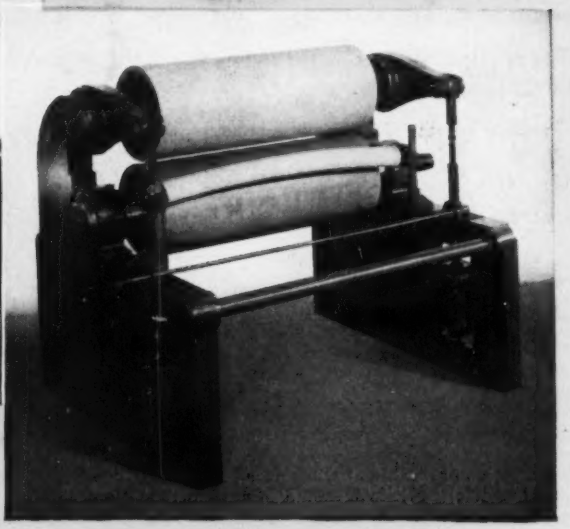
If two machines in sequence remove the same percentage weight of trash, you must consider that the second machine had to process stock containing a smaller reservoir of waste than the first unit when you compare the efficiencies. The two machines may not be equally efficient, even though

(Continued on page 206)



Left: Butterworth Pad with micro-set pressure

Below: Butterworth Pad with pneumatic pressure



At Last a Basic Padder

Pneumatic or Micro-Set . . . up to 15 tons . . .
2-3 rolls any width . . . average 12-week delivery

There's something new in Padders. A 2-year program for the standardization of component parts has now been completed and Butterworth offers a choice of 2-roll and 3-roll padders and mangles . . . in any width . . . with an average delivery of 12 weeks.

With the new Butterworth Padders, there is a choice of pneumatic or micro-set pressure systems, with pressures up to 15 tons. The micro-set system is designed to operate easily and accurately up to the full 15-ton loading pressure. The pneumatic system is complete with pressure indicators and controls.

Frames and housings are of rigid cast iron construction, properly braced. Rolls are mounted in spherical roller bearings designed for long life and trouble-free operation. Nip rolls can be furnished all rubber covered or in combination with stainless steel rolls. Accessories such as expander bars, friction let-off and winders are included to meet operating requirements.

Before you do anything about new pads or mangles, let us send a Butterworth engineer to your mill with facts and figures on these new Butterworth Pads.

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BUTTERWORTH

Electrostatic Processing Methods Are Still in the Exploratory Stage

▶ **A study of various electrical effects was necessary before any experiments could be done**

▶ **Opening and cleaning cotton by electrostatic methods are still far in the future**

By **DR. HUGH M. BROWN**, Clemson College

NO OUTSTANDING RESULTS have as yet been obtained from experiments on the cleaning or processing of cotton by means of electrostatic electricity. But the project does not seem hopeless, and many more arrangements will be tried. Here are some of the things that have already been done.

Dielectric Constant

The dielectric constant was measured by determining the ratio of the capacity of a special condenser partially filled with cotton to its capacity filled with air. The measurements were made at 200 kc. with a capacitance bridge with suitable accessory equipment.

Measurements were made at relative humidities of 45, 55, and 65% on three cottons and on several types of waste. The capacity of the condenser was measured with 10 or more increasing amounts of material in the condenser. For each mass of material the dielectric constant was computed from the ratio of capacity of the cotton-air mixture to that of air alone.

These air-cotton dielectric constants were then plotted against the mass of cotton (or trash) in the condenser. These curves seemed to be straight lines, and the mass of cotton that would completely fill the condenser was computed. The dielectric constant for cottons alone was estimated by extrapolating the curves to this mass. The values for the cottons were from 3.5 to 5.5, a favorable comparison with Balls' results.

At each humidity there is a slight difference in dielectric constant among the several cottons and a considerable difference between cottons and some kinds of trash.

Dielectric Dissipation Loss

The dielectric dissipation factor was measured with the same apparatus that was used for the dielectric constant. There is a large increase in dissipation factor with increasing humidity, and the loss is greater for picker motes than for any of the cottons or other types of waste.

Tribo-Electric Effects

Since so much charge can be produced by fiber contact and friction with various materials, we studied these tribo-electric effects with the hope that in the final machine there might just be a chance of generating the required electrostatic fields by use of the cotton being opened.

Tribo-electric effects were measured for four cottons and several kinds of trash by rubbing the specimens with a large number of materials such as glass, Lucite, Bakelite, polystyrene, roll-covering materials, etc. A means was designed to automatically rub all specimens with the same pressure and velocity to give comparable results. Considerable differences between trash and cotton were observed.

Voltages produced by rubbing with the same materials were measured by the Hayeh Chromey method, where specimens mounted on a wheel pass under the rubbing material on one side and under the grid of a detector tube on the other side to produce pulses on an oscilloscope. By comparing with pulses from a known voltage, we showed that potentials ranging to 5,000 v. could be produced on both cottons and trash.

Opening and Cleaning

Many experiments were made on opening and cleaning cotton by working it between charged grids by means of combs on long handles. Though rather large forces could be produced on the cotton by a field of 16,000 v. per in., little cleaning resulted because polarization seemed to make the trash cling to the cotton as iron filings cling to magnetized nails.

A machine having charged concentric grids, one rotating inside the other, failed to clean cotton even when various forms of teeth and bars were mounted on the cylinders to pull or beat the cotton in the field between the cylinders.

A picker-type machine employing a strong field between the feed rolls and an insulated beater removed 1.5% trash, about the same as when no field was provided for.

Cleaning by Air Minimizes Fiber Damage

▶ **The type of trash left in cotton may be more important than the amount**

▶ **There is a definite "breaking point" where neps shoot up with more mechanical handling of the stock**

▶ **The second Super Jet in a tandem arrangement is always more efficient than the first**

By **A. L. VANDERGRIFF**, Lummus Cotton Gin Co.

THE TYPE OF FOREIGN MATTER left in cotton by a cleaner may be more important than the amount left. If the remaining foreign matter is pulverized and mixed with the lint, a lot of the trash will end up in the card web. Furthermore, the machines that pulverize the lint are the same ones that cause the greatest fiber damage. We believe that cleaning by air minimizes fiber damage with a high degree of trash removal.

Air Cleaning In a Nutshell

Our theory of cleaning, as exemplified in the Super Jet cleaners, is essentially this: Two streams of air intersect—one high-velocity stream carrying the mixed lint and trash, the other going fast enough to change the direction of the lint only to the resultant direction of the two streams. Particles of greater mass than the lint continue in the direction of the high-velocity stream.

Our principle of cleaning has often been incorrectly described as a slot in an elbow through which trash is discharged by centrifugal force. Centrifugal force plays practically no part in the separation, except as an aid in the preliminary separation of lint and trash in the inclined and slightly curved section of the duct ahead of the trash-discharge slot.

Large Pieces of Trash Must Be Removed Early

Because a Super Jet has the ability to remove large pieces of leaf, grass, stems, etc., the unit should come early in the cleaning line. The efficiency of any cleaner is greatly reduced where foreign matter is broken and entangled with fibers.

The tangling of fibers with trash is apparently our greatest source of neps; so the earlier this nep stock is removed, the lower will be the nep count at the card.

We have pretty well standardized on the installation of our opener and cleaner right after the blending and mixing feeders. Some installations have the situation reversed, but those layouts do not permit the

Permits exact quality control of yarn, roving or sliver

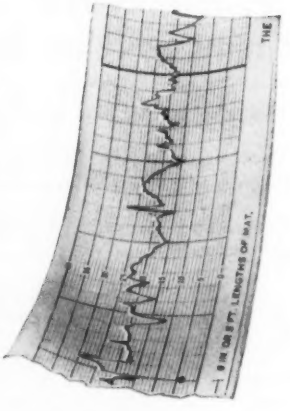
THE CHART RECORDS made by the Brush Uniformity Analyzer* provide a *numerical evaluation* of the uniformity of the material. This eliminates guesswork and helps you control quality exactly.

With this instrument, originally designed by the Institute of Textile Technology, you can grade yarn, roving or sliver at high speeds. Checking a 1000-foot sample takes little more than three minutes, a fraction of the time required by other methods.

The charts are available immediately and provide a permanent record of tests. In addition, the average cotton count or the average percentage non-uniformity is shown on the meter.

A staff of textile-trained engineers is available to assist you in application, service, and evaluation of data. In southeastern states our representative is W. A. Brown and Associates. For complete information, write Brush Electronics Company, Dept. GG-5, 3405 Perkins Avenue, Cleveland 14, Ohio.

*Trademark



This sample chart of roving indicates gross deviation from nominal weight per unit length. The chart indicates irregularities as short as ½ inch in a length of yarn.

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recommended arrangement without considerable extra expense.

To Minimize Neps, Locate the "Breaking Point"

We have a theory that if nep count or fiber damage is plotted against mechanical handling in cleaning, the curve will show a very gradual increase up to a certain point, then break sharply upward. This "breaking point" varies greatly with the fiber properties of the lint. Every effort should be made at the gin and in the mill to finish the cleaning process before the break in the curve is reached.

We have run tests on cotton cleaned elaborately and on cotton cleaned simply at the gin. Cotton elaborately cleaned in ginning showed a much greater percentage of increase in neps and in fiber damage

(Continued on page 212)

Sampled after	Shirley analyzer trash (%)		Cleaning efficiency (%)		Lint in waste (%)	
	SLM	SGO	SLM	SGO	SLM	SGO
Feed Table	4.5	8.4	–	–	–	–
Vertical Opener	8.9	7.2	13	14	47	44
Buckley Opener	3.3	6.4	15.3	16.6	21	24
#1 Super Jet	2.6	4.7	21	26.5	12	14
#2 Super Jet	1.6	3.0	38.5	36	14	16
Superior Cleaner	1.0	1.9	37.5	36	51	56
Card	0.4	0.9	60	52.5	–	–
Total			91	89		

JETS IN TANDEM, followed by an old-style horizontal-type Superior cleaner, are working satisfactorily at this mill. Cleaning efficiency shown for the SLM card sliver is the total of picker and card efficiency. Card waste for the SLM is 3.97%; for the SGO, 3.65%. The SLM has a fineness of 4.2 and the SGO a fineness of 3.6.

SRRL Opener Giving Good Results; New Cleaner Being Developed

▶ The SRRL opener at Joanna Cotton Mills is saving $22,400 a year on cotton alone

▶ Cleaning research is aimed at 50% trash removal in a single operation, with less than 5% fiber loss, at 3,000 lb. per hr.

By **RALPH A. RUSCA,** Southern Regional Research Laboratory

THE SRRL OPENER, announced at the 1951 Cotton Research Clinic and reported on at the 1952 Clinic, is just the first machine that has been developed in our research on cleaning. Further mill reports are now available on this machine, and we also have some pilot-plant results with a new cleaner that we are developing for use with the opener.

At Joanna Cotton Mills--

	without opener	with opener
Picker-room waste (%)		
Opening	0.73	0.06
Picking	0.44	0.49
Total	1.17	0.55
Savings	—	0.62
(Estimated savings per yr. for cotton)	—	$22,400
Lap uniformity		
Saco-Lowell tester, % within limits	96.6	98.2
ITT tester, % NUE	10.5	10.7
Card-room waste		
Flats (gr./flat)	13.3	13.1
Fly (oz./hr.)	2.0	1.9
Neps/100 sq. in.	40.2	38.4
Card-sliver variation (%)	13.1	12.9
Drawing-sliver variation (%)	20.9	20.2

ON 1 3/32-IN. SM COTTON, Joanna Cotton Mills is getting the above results with the SRRL opener.

Joanna Mills Is Saving $22,400 a Year on Cotton

Detailed reports from Joanna Mills and West Boylston Mfg. Co. can now be added to the information presented last year by Swift Mfg. Co.

The reports, which are summarized in the accompanying tables, show that Joanna Mills has improved card-sliver variation and lap uniformity and made a 0.62% reduction in opening and picking waste. This waste reduction is enabling Joanna to save $22,400 a year on cotton alone.

West Boylston Mfg. Co. gives similarly encouraging results. Yarn uniformity has increased, and there has been a 14.3% decrease in the amount of spinnable fiber in the waste.

Cleaner Is 30% Efficient At 3,000 Lb. per Hr.

Only experimental, pilot-scale results are so far available for the new cleaner, but these results indicate the direction in which we are headed.

The cleaner is being developed as an attachment for the SRRL opener and will take up no more than a 15x5-ft. space.

Fundamental studies on the effect of sharp-pointed projections on physical properties of cotton fibers were undertaken initially. We also studied the effect of geometrical shape of grid bars and screens on fiber properties and cleaning efficiencies.

The new cleaner has no feed rolls to compress the stock and no air to roll it. The machine is based on mechanical forces only.

We hope to attain 50% trash removal with this machine, but such a goal may not be reached for several years. On SLM stock, an average cleaning efficiency of 22% has been attained. On SGO stock, the average cleaning efficiency is 30%. Percent of lint in the waste was less than 5% even at the high production rate of 3,000 lb. per hr.

At West Boylston Mfg. Co.--

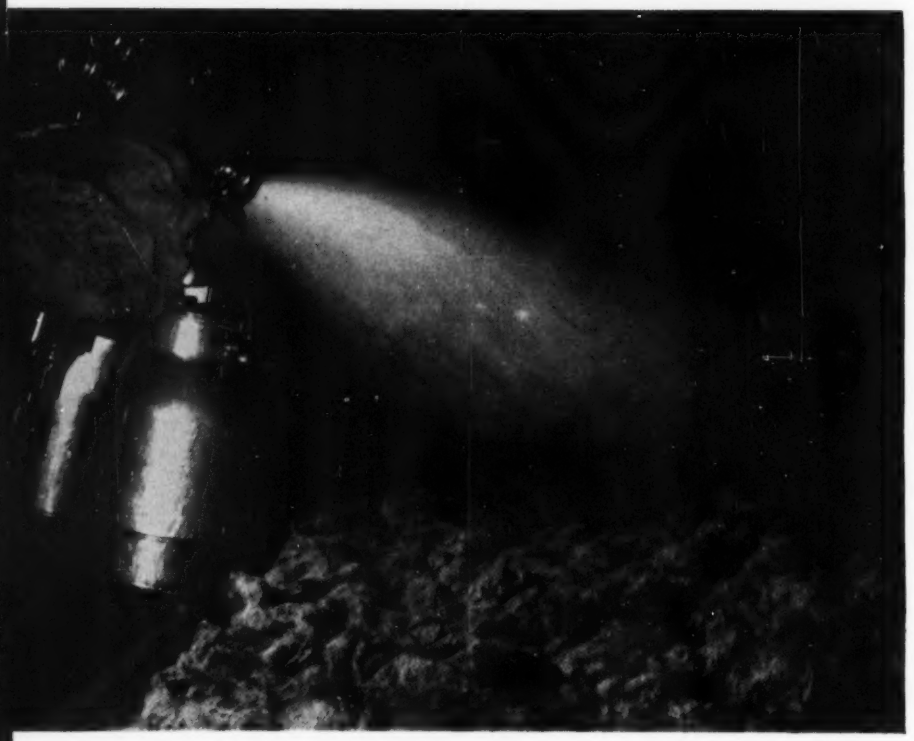
	without opener	with opener
Percent waste		
Opening	0.99	1.55
Picking	1.07	0.94
Carding		
Motes and fly	2.82	2.47
Strips	3.68	3.65
Total waste	8.56	8.61
Trash in picker lap	3.9	4.0
Percent spinnable fiber in waste		
Feeder	2.5	1.0
Cleaner	4.4	3.2
Distributor	2.2	1.7
Breaker picker	1.5	1.9
Finisher picker	2.0	2.0
SRRL opener	—	1.0
Total	12.6	10.8
Decrease in fiber waste (%)		14.3
Spinning and yarn tests		
Ends down/M sp. hr.	51.7	35.8
Yarn number	12.0	12.0
Observed size	11.4	11.9
Skein break (lb.)	180	172
Skein break (corrected)	171	171
Strength constant (corrected)	2,047	2,050
Yarn size (% coeff. of var.)	3.6	1.1
Uniformity (% range)	91.4	99.1
(% mean dev.)	15.4	15.9
Grade	B—	B—

ON 1 1/32-IN. LM COTTON, West Boylston Mfg. Co. is getting these results with the SRRL opener.

For better yarn . . . better processing . . . use

AVISCO textile chemicals

DYED STOCK loses lubricant during dyeing . . . often causes trouble. The carding room, for example, may send it back because it won't card. By spraying stock with Avisco textile chemicals at the worsted picker, this spinner (as shown at right) solves the problem, and produces marked improvements in processing all through the mill. This treatment creates a good, nep-free and splinter-free web . . . helps make stronger, more uniform yarn. These chemicals can also be applied directly at the stock dyeing machine.



You'll find the best combination of lubrication, static control and softening qualities in Avisco textile chemicals. They're readily scoured off, and they're stable in storage—won't discolor, turn rancid, or wick out at the top of the cone.

The varied types of Avisco chemicals are applicable to cotton, acrylic, nylon, rayon, acetate, polyester and other fibers, both natural and man-made—and to a host of textile processing operations. To select the most effective treatment for your application, Avisco specialists offer complete technical assistance in recommending materials and methods of use. Write today for complete information. Textile Chemicals Division, P. O. Box 455, Marcus Hook, Pa. Textile Chemicals Sales, 1617 Pennsylvania Blvd., Phila., Pa.

Avisco textile chemicals were developed in cooperation with and are manufactured by the Atlas Powder Company, Wilmington, Delaware

Avisco®

AMERICAN VISCOSE CORPORATION

America's first producer of man-made fibers

Survey Analyzes Mill Experiences With Speeded-Up Carding

▶ Twenty-one mills reporting their experience with the recommendations in the N.C. State "Nep Report," published a year ago in TEXTILE WORLD, are getting more production, fewer neps, or both, on 10s carded to 60s combed yarn

By **WILLIAM A. NEWELL**, North Carolina State College

SPECIFIC REPORTS are now available from 21 mills that have raised production or decreased neps (or both) as a result of applying recommendations of the 3-yr. study of neps recently completed at the School of Textiles, North Carolina State College [TW, May, '52, p. 91]. In many of these cases additional benefits have been obtained through improved yarn strength, evenness, etc.

The mills reporting benefits are located in North and South Carolina, Georgia, and Alabama. Cottons used range from ⅞-in. SLM to 1 7/8-in. Egyptian Fully Good to Extra; and yarn numbers spun range from 10s carded to 60s combed. Four mills are known to have applied the recommendations on all cards in the mill.

On the basis of the survey results, it is reasonable to assume that about half the mills in the South have not yet tried the recommendations. Of those that have, about half have been successful; the other half unsuccessful.

Studies of mills unsuccessful in applying the recommendations indicate that one or both of these reasons exist:

1. Mills have given up too easily.
2. Mills have not followed all the recommendations.

The survey is summarized in the accompanying tables.

The Report Involves More Than Lickerin Speed

Textile people seem to prefer to go slow in applying new ideas; in this case, that attitude is causing trouble. In the interest of going slow, mill men have decided to apply only one or two of the principles that affect speeds and settings. This approach will work in opening and picking, but in carding it can cause trouble.

The results obtained in our experiments did not come from changing any one or a few speeds or settings. Rather, after a lengthy study of the effects of varying speeds and settings individually and in combination, we concluded that best results are obtained from a coordination of the various speeds and settings involved. While the speed of the lickerin is the key factor in nep reduction, neps cannot be reduced in many cases by speeding up the lickerin only, as our report pointed out.

Mills have also not followed all of the recommendations that stressed that machinery must be in good condition. One mill reporting unfavorable results stated that it used a card built in 1894. We doubt that this card was up to the recommended condition, although the fact that our results were obtained on a card built in 1919 shows that newness of machinery is not necessary.

Why the Report Is Only a Guide

Mills have also tended to give up too easily, and this factor perhaps has accounted for more failures in applying the recommendations than any other. Successful application of the recommendations does not come easily. The principles on which the specific recommendations are based must be adapted to individual mill conditions. Many interim troubles—hot lickerin bearings, maladjusted doffer combs, warped feed rolls, etc.—will be met and must be overcome. Mr. Bentley, of Swift Mfg. Co., in his paper here last year, reported on five specific problems that had to be overcome in Swift's experimentation before good results were obtained. That interim troubles can be overcome is evident in the fact that the 21 mills reported on have apparently done so.

Still another factor that tends to cause mills to give up too easily is the literal use of the speeds and settings recommended. The recommendations given were those that worked best under conditions in our laboratories and on the cottons we were processing. These specific recommendations should be used as a guide only; far more important to getting good results is the application of the principles of processing that were developed in the research project.

Confirming this belief is the fact that we know of no mill that has been successful in reducing neps or increasing production that is using the exact speeds and settings given in the report.

Traditionalism in Mills Stymied Greater Acceptance

Another factor in failure to achieve good results through giving up too easily is the traditionalism of carders and of management. This belief has been confirmed by executives of two mills that have been successful in achieving good results. The vice president of one of these mills stated that this factor was a more important cause of failures than all other factors combined. The director of research of a large mill group also said at an executive meeting recently that the mills could card at just as high a production as the mental attitude of the vice presidents would permit.

While we feel justified in criticizing some of the complaints of mill men about our recommendations, we do not feel that we are right and the rest of the world wrong. However, enough mills have now successfully applied the recommendations to indicate the report is sound and can be used successfully if worked with diligently. We did not expect that all mills would immediately double production or cut neps in half. We do feel, however, that this research and similar research perhaps has

Summary of Mill Survey

Number of mills surveyed	150
Number of replies received	58
Percent of mills replying	38.7
Of 58 mills replying:	
20 had not tried recommendations	34.5%
6 replied that recommendations did not apply. (Were processing synthetics only, etc.)	10.5%
32 had tried recommendations	55.0%
Of these mills:	
21 obtained favorable results	65.5%
8 obtained unfavorable results	25.0%
3 were still experimenting	9.5%
Summary of favorable results from 21 mills	
Location of mills: North Carolina	10
South Carolina	7
Georgia	7
Alabama	1
South America	1
Range of cottons processed: 1-in. SGO to 1¼-in. M Leaf American, 1 7/16-in. Egyptian Fully Good to Extra.	
Range of yarn numbers spun 10s carded to 60/2 combed	
Number reporting production increases	12
Average increase in production	56.41%
Number reporting nep decreases	11
Average decrease in neps	21.41%
Number reporting yarn-quality improvements	8

Card Production: 55 Lb. per Hr.

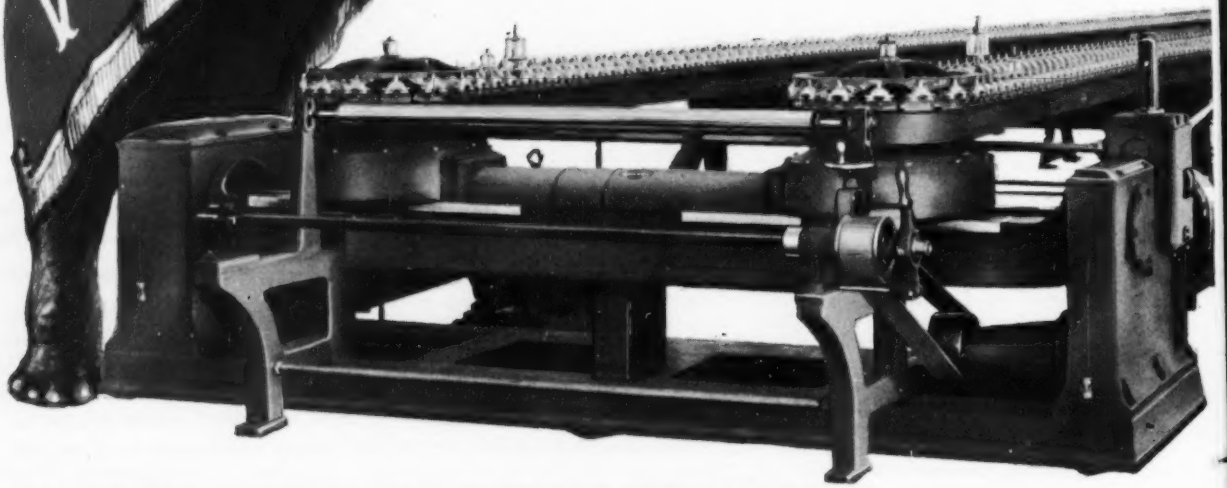
In recent experiments at N. C. State, the doffer has been run as high as 45 rpm., and card production was 55 lb. per hr. An improved comb box will permit going even beyond this high speed, it is claimed.

TALENTED FELLOW

Most people think of the elephant as a clumsy brute. In reality he is one of nature's masterpieces of balanced design. His trunk, that effortlessly pulls a circus tent stake, can deftly pluck a peanut from a small boy's hand. He is just the thing for pulling circus wagons from the mire, yet can balance his body on a tiny stand.

There are masterpieces of balanced machine design, too. One of them is the Van Vlaanderen Heavy Duty Tenter. It is built massively to withstand the racking strain of heavy clip chains revolving at high speed. It is so precisely built that it can operate around the clock indefinitely without repair. It can tenter a wide variety of fabrics, speedily and with economy.

Write for complete mechanical details of this Jumbo Tenter.



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COTTON RESEARCH CLINIC (Continued)

its greatest value in causing mill men who have been doing a job in the same way for decades to take a second look at their methods with a view to improving them. We also feel that while we have put a scratch in the surface of mystery surrounding the carding process, we have also shown that much more work remains to be done.

Mill	Cotton Used	Yarn Numbers	Card Production (lb. per hr.) Before	After	Increase (%)	Effects on Yarn Quality	Remarks
A	1-in. SGO, 1-in. LM, 15/16-in. SLM, strips	10s	15.7	25.5	66	Slight strength increase	Entire mill changed over.
B	——		14	22	57	Higher strength	Some comb-box trouble, but ball-bearing boxes not used. Cancelled planning for $45,000 worth of new carding equipment for expansion.
C	84% 1 3/32-in. SLM, 16% 1 1/16-in. SM	40/1	14.5	14.5	None	None	Neps down 21%.
D	1¼-in. M Leaf	60/2	4.5	7	33	None	Lickerin speed raised from 400 to 735 rpm. Cleaner yarn and better break.
E	1-in. SM, 1 1/16-in. SM				15	Improved	Almost 400 cards on new speeds and settings.
F	——	12s to 40s	10.0	13.0	30	None	Our basic problem has been to get people to accept the findings rather than continue on the standard basis.
G	1-in. low grade strips	16s	12	25	105	Higher strength	Have installed 15-in. sliver cans.
H	1 3/32-in.	36/2 combed	7	11½	64	None	
I	Short South American cotton	20s			50-65	12% increase in yarn strength	Speeded up looms from 156 to 172 ppm. (Looms are old Model E's without braces or spring crank arms.)
J	1⅛-in.	40s	9	15	66	Improved	
K	——		7½	12½	70	Strength, uniformity, and appearance slightly improved.	
L	⅞- and 1 1/16-in. Middling						Neps reduced 17.7%. Higher lickerin speed (650 rpm.) tested on 11 cards. Taken off because of increased fly waste.
M	1 1/16-in. Middling		7.25	7.25			Neps reduced 50%. Lickerin speed increased from 390 to 625 rpm. Put on new back and front plates. Settings similar to recommendations.
N	1 1/32-in. M and SLM	—	14.11	14.11	—	—	Neps reduced 29%.
O	1⅛-in. and 1 3/32-in. SM, 1 1/16-in. SM Mid. Leaf	—	7.5	7.5	—	—	Neps reduced 12%.
P	1¼-in. SM	—	4.5	4.5	—	—	Neps reduced 18%.
Q	1 1/16-in. M		11.85 (at 100%)	14.92 (at 100%)	25	Unevenness increased, strength lowered 3.37%	Neps reduced 7.9%.
R	⅞-in. M, 1-in. SLM, 1 1/16-in. M	——	7½	14½	91		Neps reduced 10 to 20%. We are convinced that the recommendations contained in the report have real merit and are working toward putting them into effect in all our cotton-processing departments.
S	1 3/32-in., 1¼-in., and 1 5/16-in. SM; 1 7/16-in. Egyptian Fully Good to Extra	Combed	6	5½	—		Neps reduced 30%. We worked with some of the recommendations. Along with this work we made other changes, so we have no positive measure of exactly how much improvement we can credit to any single step. We think this is a most constructive report, and plan to do further experimenting using this report as a guide.
T	1 1/16-in. S.L. Leaf Middling color	—	8½	8½	—		Neps reduced 25%. Sixty-five cards now on recommended speeds and settings. Before recommendations were applied we were grinding every 216 hr. Fly under lickerin increased but was reduced again by closing a little on angle of mote knives. Small lickerin pulley causes belts to wear out faster.
U	65% 1 1/16-in. Middling, 35% 1 1/32-in. Bright SLM	—	9.5	9.5	—	—	Neps reduced 10% by reducing picker blows per inch 25%. Trash in lap increased 5%. In carding, neps increased 10%; 30° mote-knife setting increased good-fiber waste 20%. Still experimenting.

When COLOR shows its sunny side...

Curtains and covers that face the sun need no longer fade with exposure...look "washed out" after laundering. Their makers are just one example of the manufacturers who are capitalizing on the fact that Du Pont vat dyes provide the best possible fastness. These lasting vat colors give homemakers the kind of color performance they *expect* from a fabric nowadays. Included among them are Du Pont PONSOL* and LEUCOSOL* (anthraquinone-type dyes) and SULFANTHRENE* (indigoid and related dyes). Our technical staff will be glad to work with you in your choice and application of these uniform, deep-penetrating vat colors. E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Delaware.

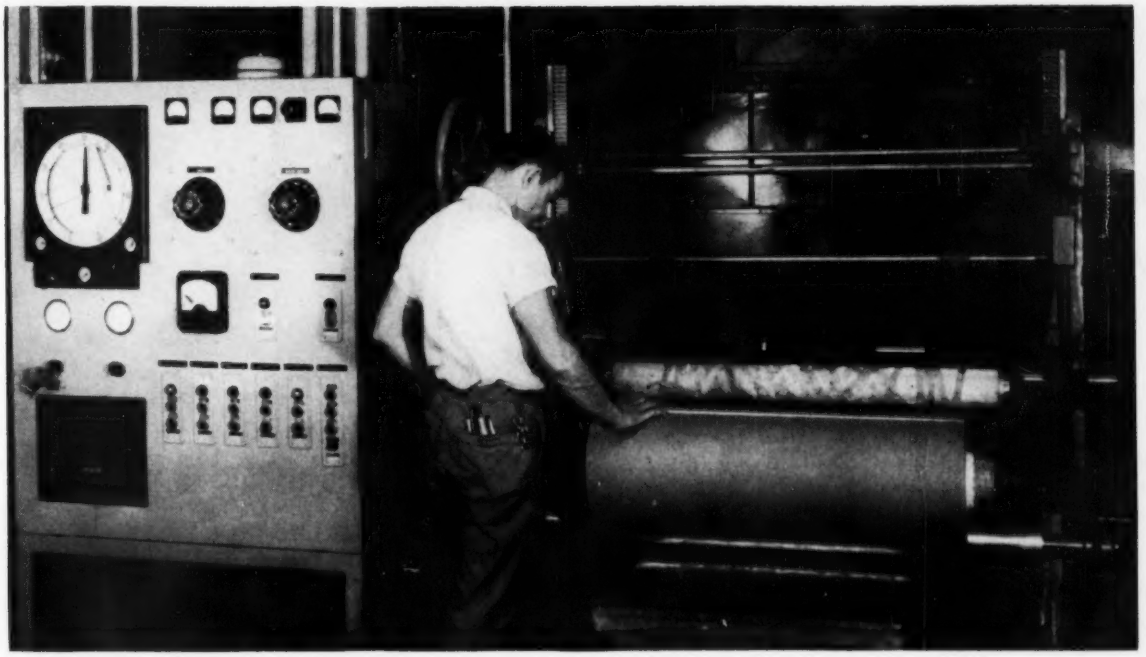
Du Pont Dyes

DU PONT

REG. U. S. PAT. OFF.

*REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

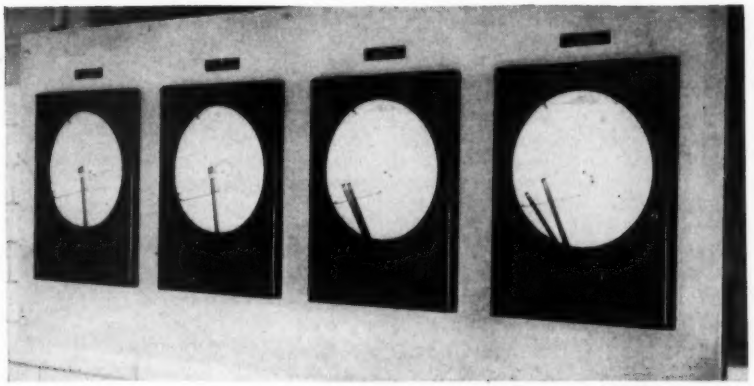


THE CONTROL PANEL for the tentering operation measures and records the moisture content of the tentered fabric. The electronic instrument is designed to reset the set points of the air-temperature thermometers by actuating their control mechanism with air pressure and thus constantly correcting for variations.

Grace Bleachery Gets Results From CONTROL INSTRUMENTS

► The installation of control instruments is only the starting point. You have to keep the instruments clean; but most of all, you have to analyze the measurements for meaningful values. Here is how Grace Bleachery applied instrumentation to its operations.

By D. B. DAUBERT, Minneapolis-Honeywell Regulator Co.



A SINGLE PANEL shows the condition of the water supply going to the power house and the steam supply coming from the power house. The two charts on the left are for the 170-lb. and 50-lb. steam lines, and the two on the right for the water supply.

THE SUCCESSFUL APPLICATION of instrumentation depends first on a thorough understanding of the process to be controlled so that the correct type of instrument will be specified. Second in importance is a willingness to analyze carefully the instrument-chart records and to take whatever steps are necessary to improve process operation.

Adequate means of measurement and control not only provide a guide to past and present performance but also give assurance that future processing plans will be carried out when set in operation.

Grace Bleachery, Springs Cotton Mills, Lancaster, S. C., has a capacity of 5-million yd. of finished fabric per week. Steam is consumed at the rate of 14-million lb. per week, processed water at the rate of 20-million gal. per week, and electricity at an average rate of 370,000 kwh. per week. Nine pounds of steam and 14 gal. of processed water are used to finish a pound of cloth.

These figures represent consumption for bleaching, mercerizing, dyeing, and finishing.

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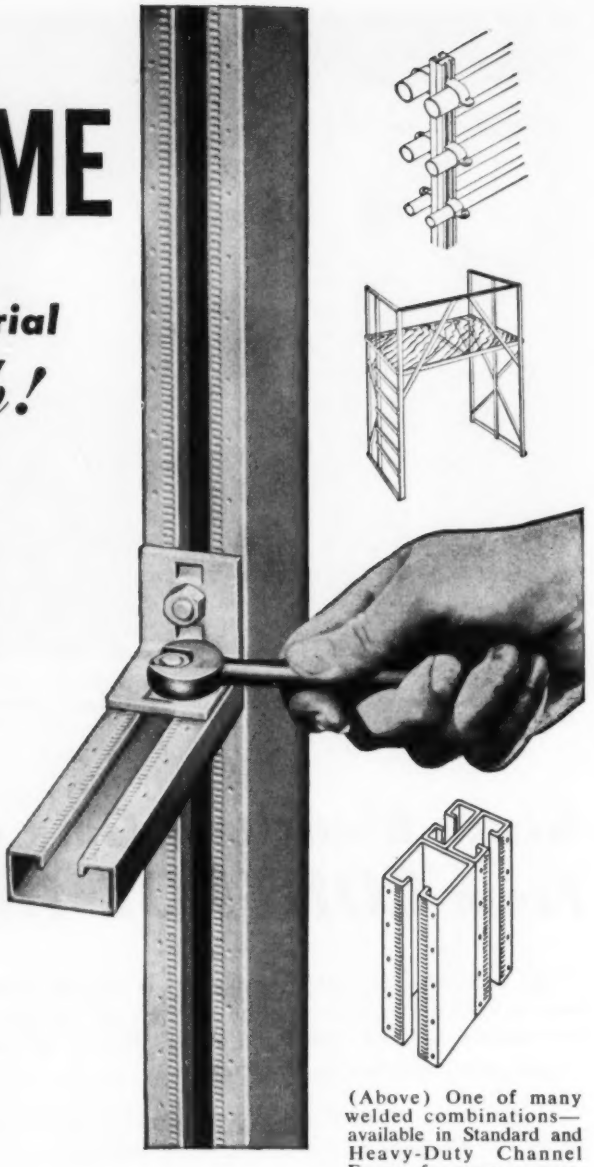
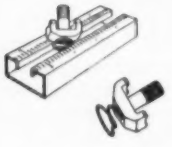


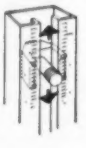
(Above) One of many welded combinations—available in Standard and Heavy-Duty Channel Frames for every purpose.

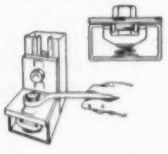
3 basic parts
. . . 3 easy steps



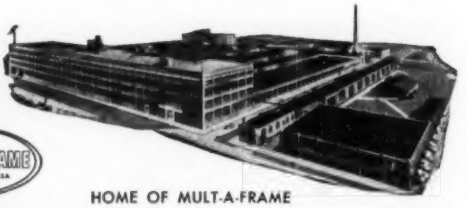
1. Push Spring-T-Bolt into Channel Frame slot anywhere along frame. Give it a one-quarter turn. Long bolt stem easily held.

2. Locate Spring-T-Bolt at desired position and release. Contact points are forced into serrations holding T-Bolt in place.





3. Attach Safe-Locking Fitting and tighten nut. Nubs on Fitting "key" into Channel Slot and prevent rotating about bolt.



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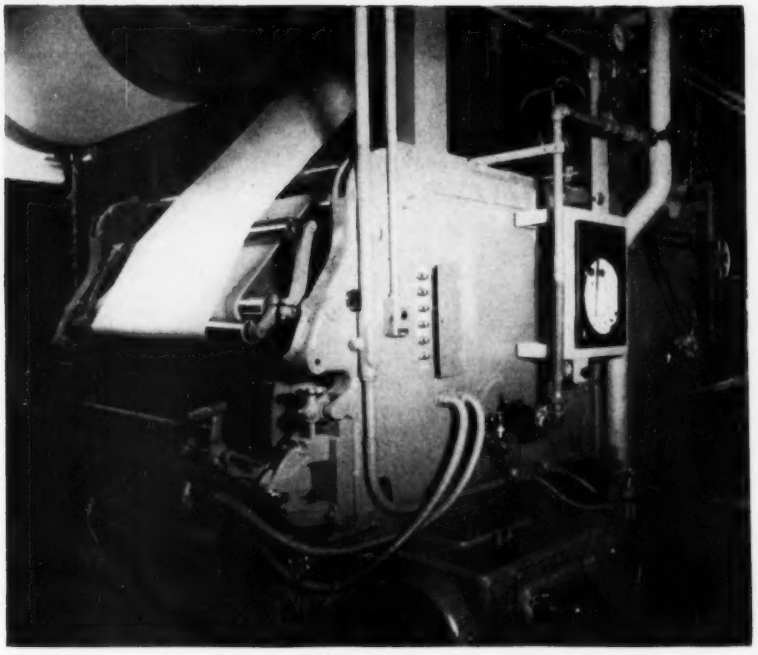


THE PALMERS on this shrinking machine are controlled by indicating pressure gauges. The operating pressure on the Palmers is kept as low as 30 psi. without sacrificing the efficiency of the shrinking operation.

Controls Stop Hidden Steam Loss

The first point for measurement within the finishing plant is on the steam lines coming from the power house. Two integrating and recording flow meters measure and record the temperature and pressure in the high- and low-pressure steam lines entering the building. These chart records appear to supply rather insignificant information, but the information is important to the plant engineer responsible for efficient power use.

For instance, the plant engineer can tell immediately how much steam he has available for the operation of the continuous-processing equipment. He knows whether additional pieces of equipment can be started up without overloading the steam-distribution system. This knowledge helps in scheduling operations and improves the efficiency of the plant.

Two other instruments measure and integrate the flow of make-up water to the power plant. Two instruments rather than one are used to increase the accuracy of the over-all system. One instrument integrates low flows and is especially designed to integrate 0 to 25% of the maximum flow. The other meter handles high-flow integration over the remaining 75% of the range.

This system supplies the answer to the problem of hidden steam losses. The elimination of these losses can easily represent the saving of thousands of fuel dollars per year, and the amortization of the equipment can be reduced to a short-term proposition.

A single panel mounted against the wall contains the charts for the four meters and supplies information for the plant cost accounting.

However, someone has to analyze the chart records and investigate the possible causes of any undesirable change in the supply lines.

Supplementary flow meters record and integrate the steam and water supplies on every bleaching range, dyeing range, and mercerizing range. These machines have a high steam and/or water consumption and warrant the constant surveillance provided by flow metering.

Steam Loss Cut at J-Box

Vapor issuing from the entrance of a J-box is an obvious waste of steam. The steam that isn't heating the cloth is heating the air in the bleachery. The lost steam condenses in the room and increases the load on the air-conditioning and air-exchange equipment.

The bleaching range at Grace Bleachery was put on full-automatic control to avoid waste of steam. New control-point settings were used; and for the trial period, a close check was made on the quality of the finished product and the use of raw material.

A better bleach, a decrease in steam consumption, and an increase in machine speed resulted.

Wash Water Controlled

Treating 20-million gal. of water every week is an expensive operation. Besides the actual cost of processing the raw water, there is the possibility that plant expansion might necessitate the enlargement of the water-treatment facilities.

Grace Bleachery determined that washing can be carried out more successfully and with less water if the wash water is maintained at a certain temperature. As a result, it reduced its water consumption by installing 22 heat exchangers equipped with automatic-control instruments. It decided that the installation of these units would cost less than future enlargement of existing water-treating facilities or the installation of a new water-treatment plant.

Another example of economy at Grace Bleachery is the operation of the Palmers on the shrinking equipment at steam pressures as low as 30 psi. A 50-lb. reduction in pressure without sacrificing efficiency is a real accomplishment. Less steam pressure used by the shrinkers means more steam pressure available for the other processing equipment.

Moisture Controlled on Tenters

The department heads at Grace Bleachery established a system of tenter control, though they were aware of the shortcomings in the regulation and standardization of the tenter operations. The tenter housing consists of three zones where heat is applied through steam coils and circulated by fans. Air-temperature measurement is made on the output side of the fans in the air stream, according to standard practice. The measurement is done by three thermometer zone controllers, which have adjustable Indexet mechanisms for remotely resetting the set points.

On the output end of the tenter, a Moist-O-Graph pneumatic controller measures the regain of the fabric being processed. A regain of 4% is generally accepted for many types of fabrics coming out of the tenter. The fabric regain at Grace Bleachery was correlated in terms of instrument readings.

The Moist-O-Graph and the thermometer controllers are coordinated in a way similar to the constant speed or cascade slasher control. As moisture measurement varies from the established set point, a proportional change in the air pressure is transmitted by the Moist-O-Graph. This air pressure is piped to the adjustable Indexet mechanisms in the thermometers, and the mechanisms proportionally shift the set points to increase or decrease the steam entering the heating coils. The result is an automatic correction in temperature to maintain a constant regain in the fabric.

.....A neat trick—for finishers of schreinered, embossed or frictioned fabrics

RESIN DJ dives into fabrics, penetrating so deeply that a desirable hand is retained without the excessive use of softeners. Resin DJ is especially useful in permanent glaze, fabric stabilization and crush resistant work. It is a UF condensate soluble at low temperatures.

FIRMEL being a partially polymerized resin of large molecular structure skates on the surface of fabrics, producing a high lustre glaze and crisp hand. It becomes permanent when used with a catalyst and cured. Firmel dissolves readily and stores indefinitely.

COMBINING the penetrating qualities of Resin DJ with the surface finish of Firmel makes an efficient and very economical formula that lessens fabric deterioration and eliminates resin build-up on rolls. You will find these resins very easy to handle. They are delivered fresh, keep well and dissolve readily at low temperatures. For test samples, write BRYANT CHEMICAL CORPORATION, N. QUINCY 71, MASS. or Box 2301, SPARTANBURG, S. C.

Brytex PRODUCTS

Exploring

The Textile Community

Comic Books Are Serious Aids To Community Education

▶ A popular technique has proved effective in getting important ideas across to workers, their families, and their communities. The program is available to other companies that want to reach a mass audience with these easy-to-absorb messages.

By MILDRED BARNWELL ANDREWS

DON'T BE SURPRISED if you see more and more textile-plant employees reading comic books. Better comic books are available to them, and matters of importance to every American citizen are being discussed in this popular predigested form. For instance, Bemis Bro. Bag Co., with the cooperation of two other organizations, is making available to American industry an important series of comic booklets on such plain, grass-roots economic and civic topics as inflation, productivity, voting, community responsibility, etc.

The messages these booklets carry are of great concern to the working and voting public. And comics are an effective way to reach a mass audience.

Comics Mold Opinion

Before publication for general distribution is undertaken, each booklet has gone through a thorough testing and evaluation schedule. Take, for example, the latest comic, "A Better Life for You," the story of the economic importance of more productivity and how it results in cheaper goods, higher wages, and consequently a better life.

First, the story was outlined and developed by Harvey Publications, Inc., publishers of the booklets, who initially produced two editions for testing only. Tests then were conducted by Psychological Corporation by tapping opinions of employees of two of the Bemis plants. On the first test 70 employees were involved. As a result of this test, questions were reweighed and a second test was given at another plant.

This time 361 employees were polled. Employees were divided into three groups: those requested to read the booklet in the plant, those who received copies by mail at home, and others who did not see that booklet. Key questions on the general subject were asked, and attitudes on comics in general were scrutinized. Results of the test showed that opinions undoubtedly had been molded by the factual and interesting approach to the subject of more productivity.

How Booklets Were Tested

Bemis's General Personnel Dept. then mailed the test-run booklet to nearly 1,000 key executives in a national cross section of industry represented by 471 companies. More than 56% responded and answered such questions as:

"Do you think it is important that employees clearly understand why more production per man per hour is necessary?"

"Do you think it is management's responsibility to tell the 'more-production story'?"

"Do you think the cartoon technique is an effective way to tell the 'more-production story'?"

"Do you regularly distribute information and educational material to personnel?"

"Would you consider this illustrated booklet appropriate for distribution to your employees?"

"Do you believe this booklet will have good voluntary readership among your employees and their families?"

Statistics were overwhelmingly in the affirmative on each question. But executives did some fine editing and some severe criticising. Most of their suggestions were incorporated when the booklet was finally edited and released for general distribution.

(*Continued on page 222*)

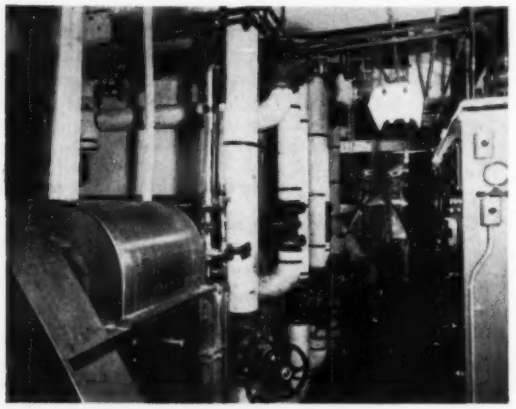
Copyright Harvey Publications, Inc.

COMIC BOOKS like these discuss economic and civic topics important to the working and voting public. Subjects like inflation, productivity, and community responsibility are covered.

Cook ranges are automatic

BUT WE DELIVER SERVICE IN PERSON

When you ask Cook for service, our engineer becomes a familiar face at your plant. Machines are designed to fit your requirements, problems are usually solved on the spot. It is not a mechanized procedure, but we haven't found any substitute for personal service when it comes to getting installations started-up smoothly. For instance, this Cook-P&N continuous bleach range was installed in a limited space without interruption to production and has been running steadily at better than 90% efficiency at nearly double usual range speeds. Your request for *any* service will be answered promptly by an engineer. COOK-P&N MACHINE CO., INC., 365 DORCHESTER AVE., BOSTON 27, MASS.



In this Cook continuous bleach range, the saturator in the foreground, is the peroxide unit and is inside the radius of the J-box which is self supporting without massive structural steel supports. Arranging the saturators and scrays inside the radii, put this Cook range consisting of singeing, desizing, acid, caustic and peroxide units, in a 16′ x 54′ floor space. The acid J-box is in the background with the caustic and peroxide boxes on the left. Cloth shown leaving a saturator passes over a positive pull reel, then falls into a stainless steel scray, then goes directly to the folder drum.

DESIGNERS & MANUFACTURERS OF BLEACH, DYE, FINISHING, MERCERIZING, CLOTH OPENING AND WASHING RANGES

How the Management Team Can Build Better Human Relations

Pointers FOR SUPERVISORS

What Workers Expect of a Foreman

▶ Your understanding of the human-relations aspect of your job isn't complete until you know what your employees want from you. Here's what workers themselves say makes a good or bad foreman.

By **MACON P. MILLER**
Director, Industrial and Public Relations, Fieldcrest Mills

THIS PAGE HAS CARRIED many articles of advice or suggestions to foremen on the handling of their personnel and human-relations problems. The complete scope of these problems, with all their aspects, is not evident unless we take a look at what the employees expect of the foreman.

The most direct way of finding out what the employees want from a foreman is to ask them. There have been many attitude surveys conducted in recent years that touch on the subject of employee satisfaction or dissatisfaction with supervision. This article gives a brief summary of some of the findings from such surveys.

Be Available

Many of the findings are simple and commonplace things that we nevertheless may tend to overlook. For example, employees want a foreman to be available when they need him. They apparently do not like to carry around for very long an unsettled problem or an unanswered question. Consequently, a foreman who is satisfactory in other aspects of his job can cause dissatisfaction among his employees by excessive absence from the department.

Not only do employees want the foreman to be available; they want him to be approachable. If the foreman is the sort of person you "can't get to" or "can't talk to," his mere presence in the department is no great source of satisfaction to the employees. This matter of approachability does not refer to the foreman's manner after the employee has made contact with him. It apparently refers to the difficulty of making the contact or "breaking the ice." The complaint is that the foreman is unfriendly or aloof; he does not invite contacts with his employees. The employee does not want to be buddies with the foreman. But he does want to feel free to talk to him when the occasion demands it.

Be Considerate

The employee wants to be "treated like a man" by his foreman. This phrase crops up time and time again. It probably has several meanings. But the main ones have to do with the way the foreman gives instructions or orders to the employee and the way he reprimands the employee. The employee wants to be "asked in a nice way" to do things; he resents the tone of command. He also resents being reprimanded in offensive language and without an opportunity to present his side of the story. The manner and justification rather than the reprimand itself appear to be the source of complaint. Many employees will comment favorably on the supervisor by saying, "He only bawls you out when you deserve it." They will take a reprimand, then, when they feel there is reason for it and when the foreman's manner does not violate their self-respect.

While recognizing the foreman's jurisdiction over him on the job, the employee objects to being treated as an inferior or a nobody without any recourse or any rights of his own. He may be only a sweeper in the mill, but he is also a man.

The employee wants the foreman to have confidence in him. He wants to be permitted to do his job without being fussed at or driven.

Be Helpful

He likes a foreman who will get things done for him. And if the foreman's authority is not sufficient in certain matters, he wants the foreman to represent him at the higher managerial level—to take the matter up to the place where something can be done. The foreman who gets things done for his employees and his department stands in high regard. The foreman who forgets justifiable requests or complaints or who ignores them or doesn't push ahead to get something done about them is in low regard. So, while the employees recognize the foreman as part of management, they also expect the foreman to represent them to higher management.

When employees work in adverse conditions or in emergency conditions, they expect the foreman to recognize these conditions and make allowances for them. And they expect him to call these conditions to the attention of higher management and to pitch in to clear them up.

They may get it only rarely, but they would like recognition or some sign of appreciation from the foreman for a job well done. A common comment is: "I know soon enough when I've done something wrong. Other than that, no one says anything."

Be Impartial and Consistent

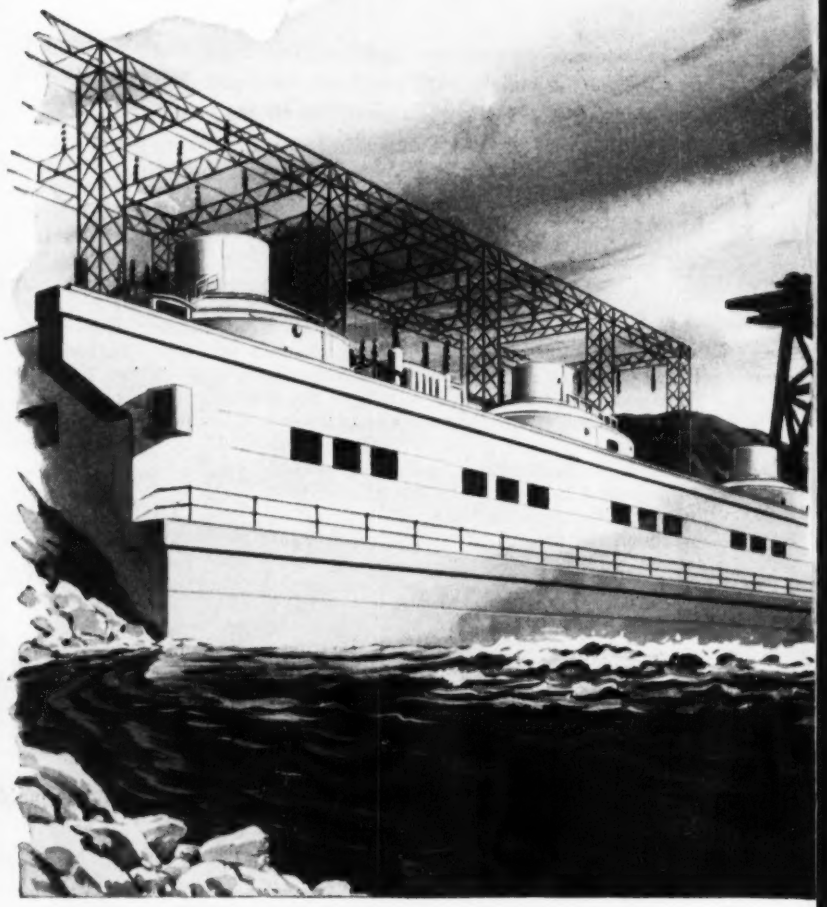
Employees expect impartiality and consistency in the enforcement of rules. When rules are enforced on some

(*Continued on page 218*)

Alemite Fights Friction

in $22 million hydro-electric plant!

Protecting the Heart of an Industrial Giant with Alemite Centralized Lubrication



Rising 132 feet above the excavated Snake River Bed near Mountain Home, Idaho, stands the C. J. Strike Dam. Here, in the newest and largest of the Idaho Power Company's vast network of hydro-electric plants, giant turbines drive massive generators—convert billions of gallons of water into energy for man's needs.

It was vital that lubrication of this engineering colossus be safe, sure—absolutely dependable. The three huge turbines driving 30,000 kw generators required lubrication every four hours—*at 444 separate points!* Significantly, an Alemite Accumeter Lubrication System was chosen for this important work.

Throughout all industry—wherever metal touches metal—you'll find Alemite systems on the job. Boosting production, cutting costs. Giving power, precision and smooth-as-velvet performance to a world in motion.

Alemite lubrication engineers can help you save. For further information, contact your Alemite distributor. Or send for free, informative booklet, "11 Ways to Cut Production Costs." Just mail the coupon below—today.

Alemite—Greatest name in lubrication —serves the greatest names in industry

The same safe, sure method that every day lubricates billions of dollars worth of industrial, farm, marine and aviation machinery can protect *your* plant equipment against the ravages of its number one enemy—*friction!* Here are but a few of the industrial leaders who rely on Alemite . . .

The Timken Roller Bearing Company
Celanese Corporation of America
Minneapolis-Honeywell Regulator Company
Republic Steel Corporation • Link-Belt Company

A PRODUCT OF SW STEWART WARNER

ALEMITE

Reg. U.S. Pat. Off.

35 Years of Lubrication Progress

Alemite Accumeter Systems permit automatic lubrication . . . uninterrupted production

From one central point, Accumeter automatically measures and delivers lubricant to *all* bearings—while the machine is in motion! Does it in a fraction of the time required for hand-gun lubrication. No downtime . . . no points missed!

Please send me ***FREE*** *New Booklet*

☐ **"11 Ways to Cut Production Costs"**

☐ Include facts on **Accumeter**—Alemite's amazing lubrication system that lubricates while machine is in operation.

Alemite, Dept. J-53
1850 Diversey Parkway, Chicago 14, Ill.

Name .....

Company .....

City ..... State .....

TEXTILE Equipment NEWS

Improved Truslow Blender Tints and Sprays Oil

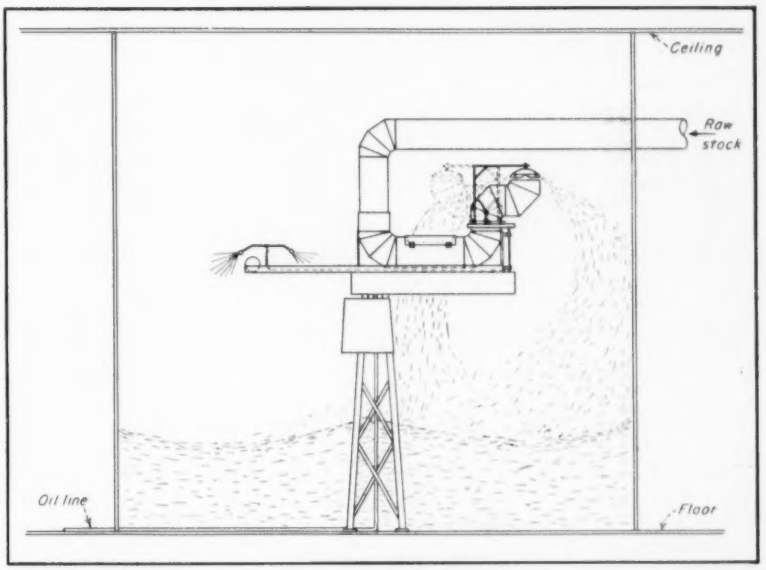
A new blender, not to be confused with the old Truslow blender but as yet unnamed, has been developed for commercial mill applications by Grover C. Truslow, 315 Boone Road, Leaksville, N. C. The new unit is mounted on a frame or tower that revolves in a big circle six or more times per minute at the same time that a small arm at the end of the larger one revolves more rapidly and spreads the stock well in the localized area the main arm is swinging through.

The machine has added features of value, such as a tinting arrangement for tinting stock or adding fugitive dyes, and a patented oil- or emulsion-spraying system. The need for sandwiching of stock and presenting it by hand to the picker feeder is also eliminated.

The new blender is designed to cover thoroughly a larger floor space than the original Truslow units are capable of. Thousands of pounds can be run through into a bin in one batch, and they will be well mixed.

The new unit should be especially valuable in larger mills that use large quantities of wool that need to be well blended before processing, and in modern garnetting and waste-fiber-handling mills.

Asbestos fiber, perhaps the most difficult to blend properly because it is heavier and clings, is blendable into good stock for good yarns with this unit, with cotton as the carrying agent. Knitting-yarn spinners will also find the blender useful.



CROSS SECTION of new blending unit shows the blending idea and also the tinting and oil-spray devices. The picker does not have to get dirtied up from oil spray or tinted by the stock now that these solutions are added after picking.

Circle T-1 on Reader-Service Card

Laminated-Plastic Emulsion Rolls Resist Staining

Laminated-plastic emulsion rolls designed to solve the twofold problem of yarn staining and corrosion resistance have been announced by Synthane Corp., 24 River Road, Oaks, Pa.

The outer shell is fabricated from 3-in. OD Grade XX tubing and provides an extremely smooth surface for the yarn to ride over. By resisting the corrosive action of newer and increasingly acidic sizes currently being used in the textile industry, Grade XX eliminates the staining problem caused by the corrosion of rolls.

The ¾-in. hubs are fabricated from a fabric-base material possessing high mechanical strength. Hubs are press fitted and cemented with a non-corrosive adhesive. Stainless-steel set screws lock the assembled rolls to the steel shafts.

The new laminated plastic rolls are 3 in. long and are designed for use on sizing machines of the Universal and Foster types.

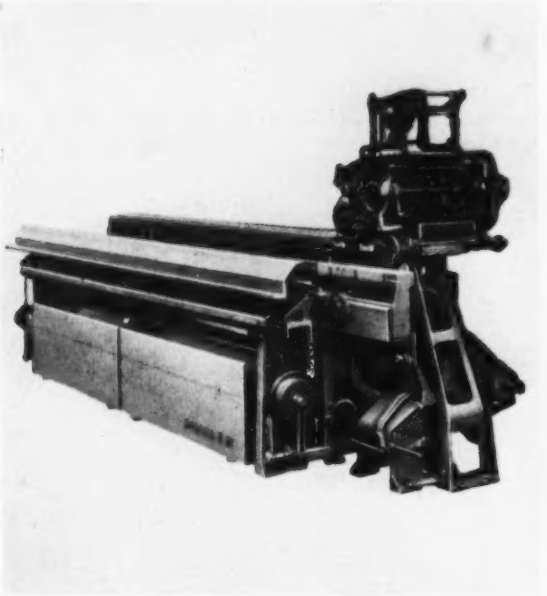
Circle T-2 on Reader-Service Card

NO MORE CORROSION of emulsion rolls on sizing machines is encountered when these 3-in. rolls are used. As a result, yarn stains are eliminated.

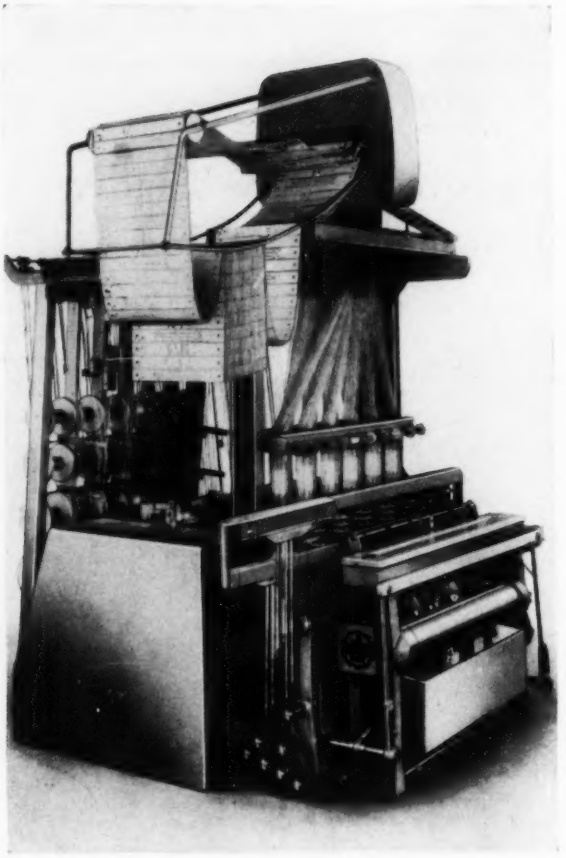
Swiss Label and Ribbon Looms Are Versatile

Narrow-fabric looms developed by Jakob Mueller, Frick, Switzerland, for the manufacture of rayon, cotton, silk, and elastic tapes and ribbons are now available in the United States from Ernest L. Frankl Associates, 22 E. 40th St., New York 16, N. Y.

Circle T-3 on Reader-Service Card

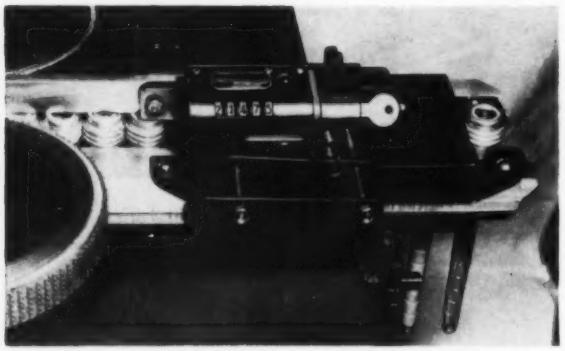


VELVET RIBBON LOOM (CRs 29) is built with 8 to 56 spaces for ribbons ⅛ to 12 in. wide weaving at 160 to 180 ppm. and with 14, 16, 20, 26, or 32 dobby shafts. Filling and warp stop motions are provided.



JACQUARD LABEL AND RIBBON LOOM (CJ-29) is built with from 6 to 56 spaces, ½ to 12½-in. gap, 1 to 5 shuttles, for speeds up to 150 ppm., and for jacquard heads with 200, 400, or 600 hooks.

Counter Puts Quill Cleaning on a Piece-Work Basis



INCREASED QUILL-CLEANING EFFICIENCY and a better job for quill-cleaning operators is made possible with this counter that keeps track of units handled.

An accurate method of counting quills processed through its Type L quill-cleaning machine has been developed by Terrell Machine Co., Charlotte, N. C., in collaboration with Durant Mfg. Co., 1929 N. Buffum St., Milwaukee 1, Wis. A new Model 5-D-6-2-S Productimeter with a star-wheel drive and a floating bracket attachment eliminates counting inaccuracies and contact troubles and makes quill cleaning a piece-work operation.

The counter and adjustable attachment bracket are mounted on the cleaning machine in such a way that the head of each quill rotates a star wheel attached to the counter drive shaft. The action of the star wheel is controlled, to prevent too great a drag or too little stop action, by an adjustable ball spring ratchet. The counter and star-wheel assembly is mounted on a floating bracket that automatically adjusts to the size of the quill being processed.

The counter installation is tamperproof for all practical purposes because all moving parts are housed and the counter can only be reset with a key.

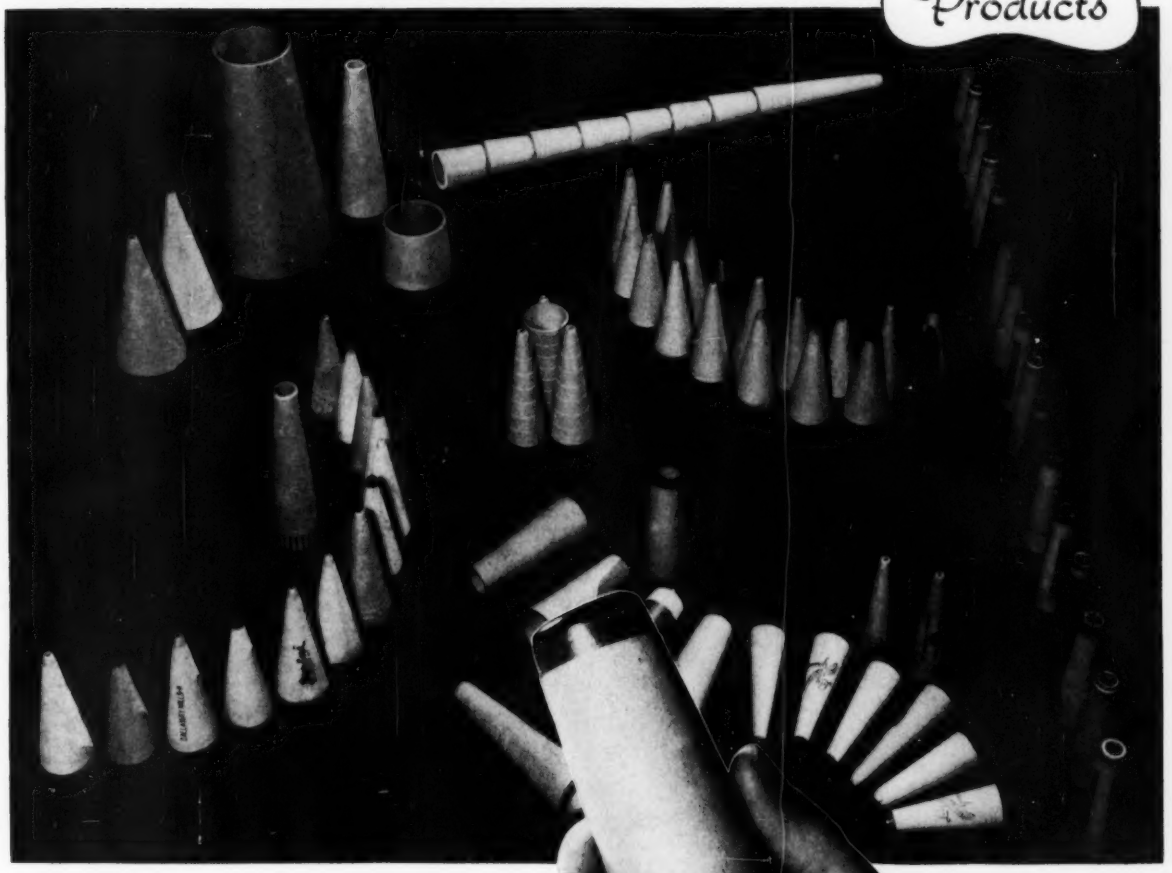
One mill reports its quill-cleaning operation has been speeded up from 30,000 quills to 43,000 quills per shift. Another reports the elimination of two operators since it has put its quill cleaning on an incentive basis.

Circle T-4 on Reader-Service Card

SERVING THE TEXTILE INDUSTRY SINCE 1899

SONOCO

Precision Paper Products



CONES by Sonoco — standard of the world! For more than 50 years, Sonoco research has been successful in the development of a right cone and taper for every yarn.

Sonoco cones are supplied with various surfaces and can be printed inside or out and are available with notches, scores, perforations, and in many engineered nose or tip designs in special tapers. Lacquer tipping, dyed base and tip, and striped base can be furnished on cones as a means of quick identification.

Our complete laboratory and engineering departments are available for consultation.

sonoco
SERVES THE WORLD
PAPER CARRIERS
REG. U.S. PAT. OFF.

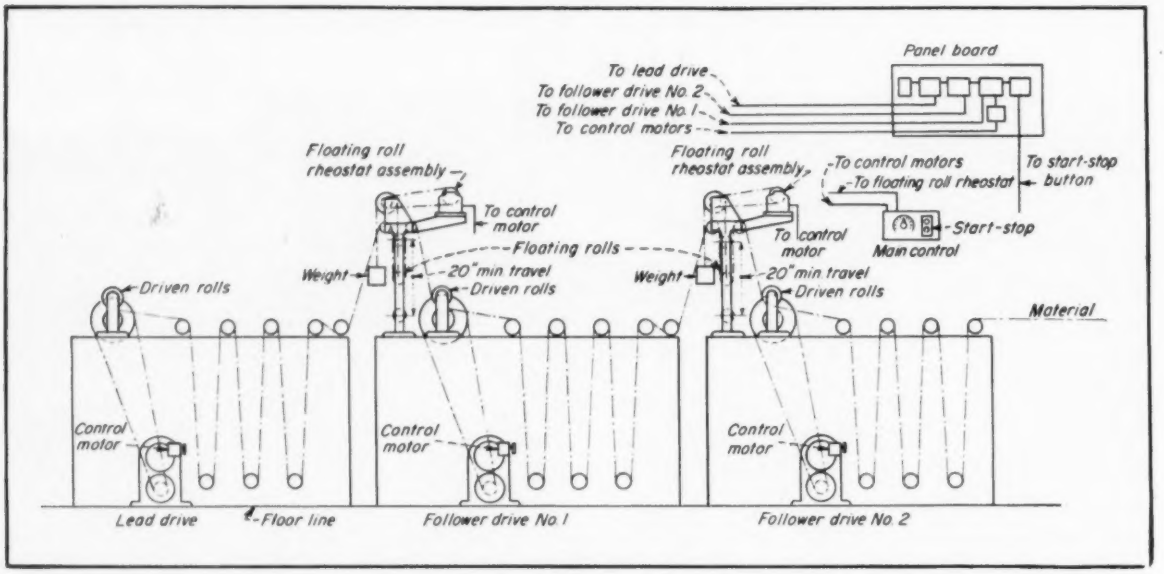
SONOCO PRODUCTS COMPANY

MAIN OFFICE—HARTSVILLE, S. C.

MYSTIC, CONN. LOS ANGELES, CAL. BRANTFORD, ONT.
PHILADELPHIA, PA. GARWOOD, N. J. LOWELL, MASS. GRANBY, QUE.

DEPENDABLE SOURCE OF SUPPLY

A.C. Range Drive Has Variable-Speed Control



SPEED VARIATIONS are compensated for by floating rolls that operate automatically, actuated by the tendency for increase or decrease in tension of the material. Thus all units are kept in perfect synchronization.

A new range drive that gives accurate, immediate, infinitely variable speed control plus automatic inner-drive synchronization of all ranges without the problem of converting current has been put on the market by Reeves Pulley Co., Inc., 1225 Seventh St., Columbus, Ind. No generators are needed with the drive.

The new range drive is a constant-torque drive and does not need oversize capacity for reduced speeds. It is a mechanical drive and, consequently, gives two decided advantages: (1) any number of follower drive units can be added to the original installation without adding generators or conversion equipment, and (2) repairs and maintenance consequently are less complicated.

In the drive, the operating or material speed is set through the lead drive, with the whole system controlled from one control panel. Each follower drive can be adjusted at any time by its own individual manual controls. Once the range is operated, automatic controls take over.

As speed variations occur because of stretch, shrink, or load changes between units, the individual units automatically compensate for the changes and bring all units back into synchronization.

The schematic drawing shows how floating rolls operate automatically to compensate for speed variations, actuated by the tendency for increase or decrease in tension of the material. This arrangement keeps all units in perfect synchronization.

Circle T-5 on Reader-Service Card

Metallized Ceramic Thread Guides Can Be Soldered

NO COMING OFF or shifting of position on the guide plates is possible with these ceramic thread guides that are now prepared by the manufacturer for soldering into position.

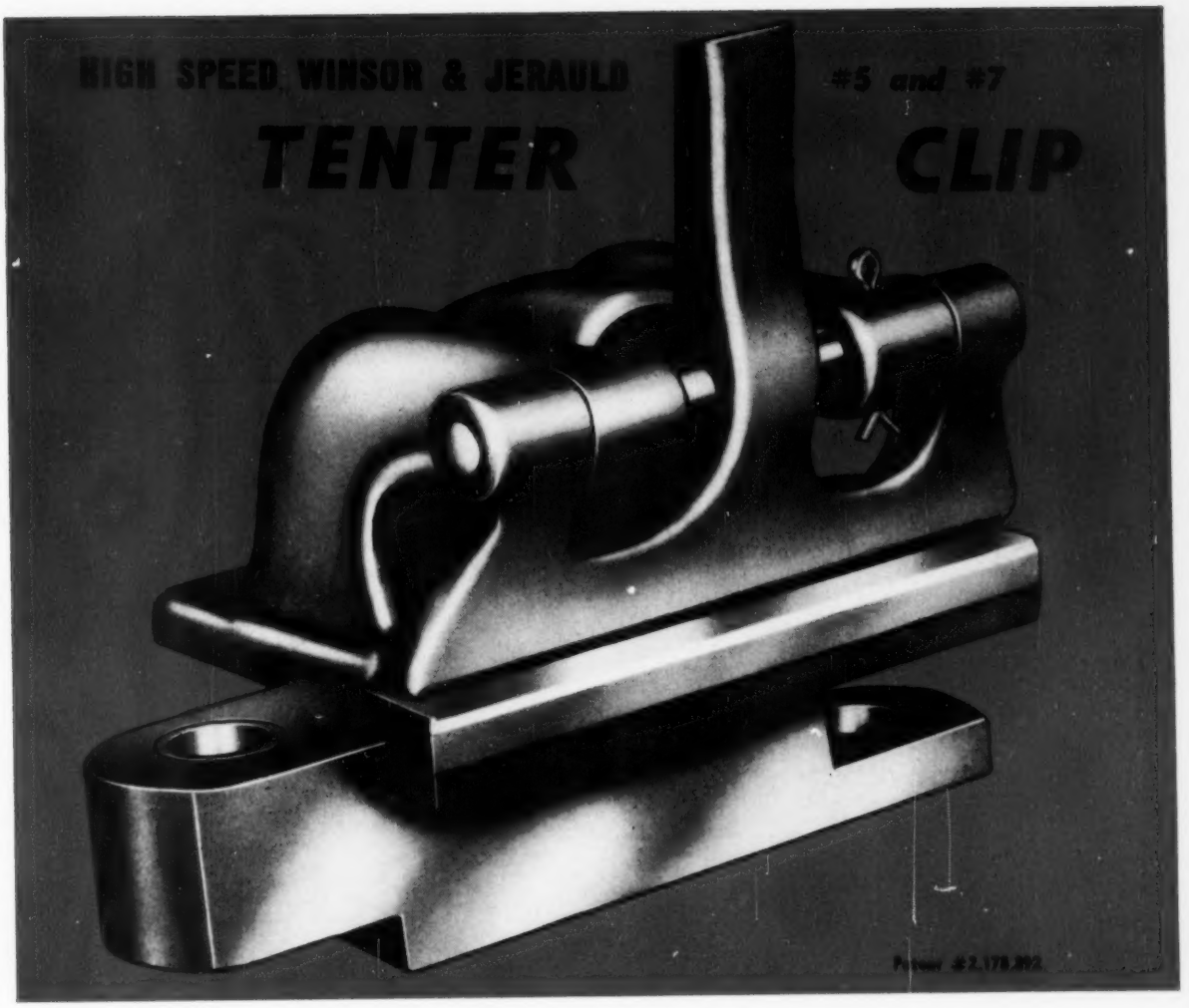
AlSiMag thread guides with specific areas metallized for attachment by soldering are announced by American Lava Corp., Cherokee Blvd., Chattanooga 5, Tenn. The new development makes possible the firm attachment of small ceramic inserts in places where a smaller guide can increase production speed.

Ceramic guides have such a long life that it is worth while to solder the guides in place to preclude any possibility of their coming off or of altering their exact position. This soldering can now be done. The characteristics of the ceramic are not altered in any way.

Selected areas of the guide are metallized and the metal fired into the ceramic to become an integral portion of that section of it. The metallized area of the ceramic is then built up by the manufacturer to any desired thickness by electroplating.

Some AlSiMag guides are now also made of an electrically conductive ceramic to aid in the control of static. Soldering these electrically conductive guides into position on a grounded metal seems to improve their performance in the bleeding off of static electricity.

Circle T-6 on Reader-Service Card



The Choice of Discriminating Finishers

High speed tenter clips are manufactured by Winsor & Jerauld for all makes of tenter frames and are engineered for your fabrics.

Precision parts reduce maintenance costs because they are made from selected metals and heat treated where necessary to meet the shock and stress of continuous high speed operation.

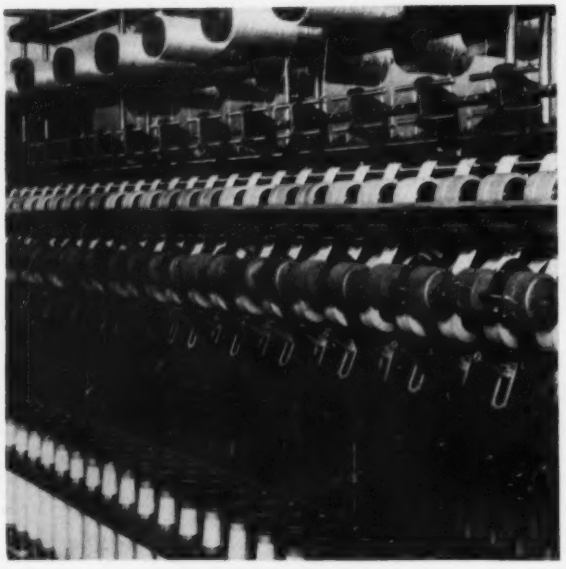
The Clip Body is made of high grade malleable iron, reinforced at vital points, and the clip jaw is constructed with a special high grade bronze alloy and is ribbed for extra stability.

The closed front, a patented design, protects the cloth from spatter of sprocket lubricants. It also reduces the unit pressure of each clip against the rail and increases the life of the chain.

Our Southern Division is fully equipped to check and repair tenter chains of all types. We look forward to serving you from our main plant in Providence or from Charlotte.

Winsor & Jerauld
MANUFACTURING COMPANY, INC.

Machine Spins Directly From 1,000- to 6,000-Den. Tow



DRAFTS from 4 to 60 are possible after the tow has been cut into staple, whose length can run from 2 to 6 in. Uniform yarns, some as fine as 130s cotton count, are spun directly from the newly formed staple.

A new direct spinner that incorporates a cutting apparatus in the drafting field to replace the "cracking" method hitherto used is now available commercially from Johann Jacob Rieter & Co. Ltd., Winterthur, Switzerland.

The cutting and drafting arrangement of the new Cutdrafil machine—which is in other respects similar to the company's latest ring spinning frames, with movable spindle rails, broken-end extractors, and compressed-air front-roll pressure system—consists substantially of a pair of front and rear gripping rolls and intermediately disposed cutting rolls that sever the tow passing through.

An adjusting device allows for variations of the angle at which the tow is led into the cutting plane of the cutters. In this way the drafting arrangement can be adapted to the varying characteristics of various raw materials being processed. The adjusting device and cutters are arranged as needed. By means of these adjustable components, yarns can be produced with a maximum total shrinkage of only about 5%.

The new frame is capable of handling tow ranging from 1,000 to 6,000 den., with individual filaments ranging from 1 to 6 den. Drafts from 4 to 60 are possible.

The cutter adjustment permits the production of staples ranging from 2 to 6 in. The machine can handle viscose, acetate, or any other synthetic material. The usual range of yarn numbers is from 20s to 60s cotton count.

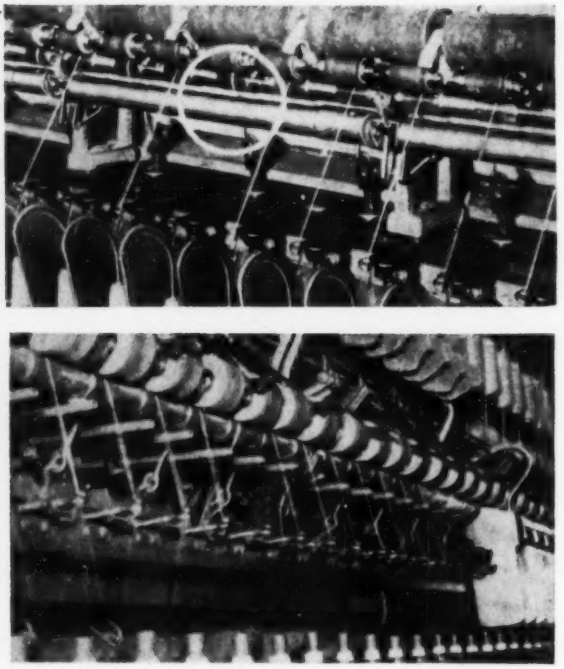
From a high-tenacity acetate tow, however, yarn of 130s cotton count has been quite satisfactorily spun with staple lengths of 4 and 6 in.

Yarns spun on the Cutdrafil machine are said to be of great uniformity and require less twist than conventional yarns of the same breaking strength. The yarns are particularly well suited for use as filling yarns.

The standard unit is built with 240 spindles, of 3½-in. gauge, with rings of 2⅜-in. dia. and for 11-in.-long paper bobbins.

Circle T-7 on Reader-Service Card

Suction-Type Frame Cleaner Uses Minimum of Power



COTTON AND SYNTHETIC-STAPLE spinning system (top) and worsted ring spinning (bottom) use different types of suction tubes. Reduction in the number of ends down insures less hasty work and thus better work from frame operators.

The Thoma cleaner, a Swiss-made pneumatic cleaner for ring spinning frames that needs one-third to one-half less power to operate compared to other types, has been made available for American-mill installations. The sole agent in the United States is Stellite American Corp., 60 E. 42nd St., New York 17, N. Y.

The pneumatic frame cleaner is designed for use on all types of frames and with practically all kinds of fiber, including cotton, wool, synthetics, animal hairs, and ramie. There are over 2½-million spindles around the world equipped with the high-quality-producing device.

Advantages of the pneumatic cleaning system are (1) a yarn production increase usually running from 5 to 15%, (2) 30% greater spindle assignment possible per operator, (3) considerable saving of raw stock in a directly reusable form, (4) improved yarn quality, (5) elimination of scavenger rolls and their maintenance, and (6) less wear and tear on front rolls and on the frame tenders themselves.

The Thoma cleaner has no V-belts. The fan in the filter box at the foot end of the frame is coupled directly to the motor driving axle. The fan is exhausted toward the floor to minimize air drafts and interference with relative humidity, while the motor stays cool because it is located in the middle of the suctioned air current coming through.

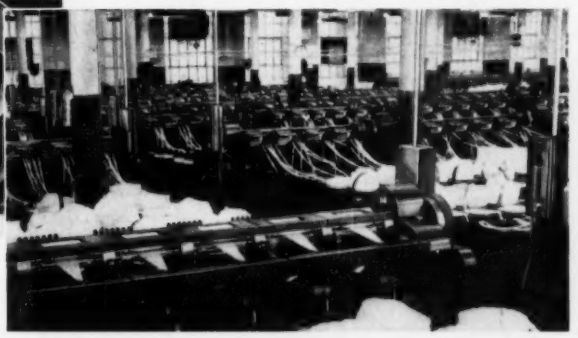
In installing, the central duct is placed under the roller beam when possible to avoid having to raise the height of the creel. Thus the control duct has no elbow but runs directly into the filter box. If there is not enough space for the filter box on the floor, it is fitted into the creel without causing a single spindle to be taken out of production.

Circle T-8 on Reader-Service Card

CUTLER-HAMMER

MOTOR CONTROL FOR THE TEXTILE INDUSTRY

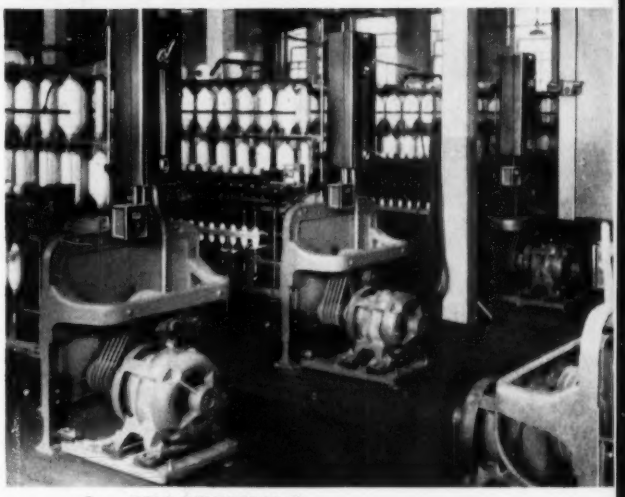
for EXPOSITION at Atlanta.
(At left) Cutler-Hammer Magnetic Starters and Safety Switches in the opener room and (below) Cutler-Hammer Combination Starters on drawing frames.



Specify it by name

Cutler-Hammer is the natural choice of experienced men who know dependability in motor control for textile manufacturing is too important to be left to chance. They know that Cutler-Hammer dependability is not a mere competitive claim but a fact that can stand out clearly in a mill's operating records to reflect favorably on their own ability and good judgment. They also know Cutler-Hammer dependability is not an occasional happenstance... that it is the earned advantage of the longest and most intensive specialization in motor control engineering... that it can safeguard every control need over the entire range of textile manufacturing requirements from the simplest starter to the most complex of electronic equipment.

You too will find it pays to insist on Cutler-Hammer Motor Control and refuse all substitutes. An adequate network of Authorized Cutler-Hammer Distributors throughout the textile manufacturing areas insures prompt attention and supply. CUTLER-HAMMER, Inc., 1457 St. Paul Avenue, Milwaukee 1, Wisconsin.

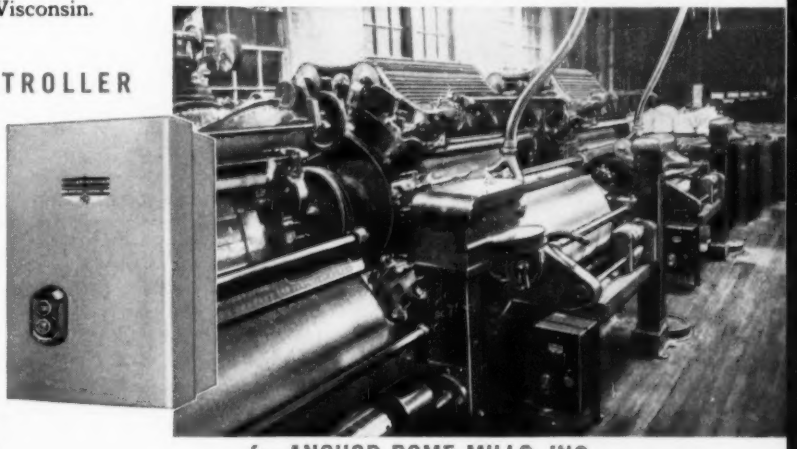


for STATESVILLE
Cutler-Hammer Combination Starters and Shipper Rod Switches on spinning frames. STATESVILLE DIVISION, The Seminole Mills, Statesville, N. C.

CUTLER-HAMMER CARD CONTROLLER

With integral drum type reverse switch

Here in one self-contained unit is all the control needed for a card...convenient pushbutton starting and stopping *plus* an integral reverse switch for cleaning and grinding. Card cannot be reversed accidentally or by any unauthorized person when controller case is padlocked. Easier to install. Easier and safer to use. Felt-gasketed against lint. Famous Cutler-Hammer Eutectic Element Overload Protection specially arranged to provide long starting time (required for cards) without loss of normal operating protection.



for ANCHOR ROME MILLS, INC., at Rome, Ga.
Cutler-Hammer Card Controllers in a neat installation for individual card drives.

CUTLER-HAMMER
MOTOR CONTROL
C-H

New Swiss Tow Cutter Has Overhead Creel

CONVERSION OF SYNTHETIC TOW to staple of almost any length at a production rate of 125 lb. per hr. is what this machine can do. Three delivery speeds are possible.

Staple that can be drafted in subsequent processes is made on a new tow Convertor that has been developed recently by Johann Jacob Rieter & Co. Ltd., Winterthur, Switzerland. Outstanding features are (1) over-all length of 17 ft., (2) 3½-ft. width, (3) delivery speeds of 45, 65, or 90 yd. per min., (4) draft of about 15, (5) resultant-sliver weight of 150 to 220 grains per yard, (6) production rate of 125 lb. per hr., (7) cutting rolls for from 2½- to 6½-in. staple length, and (8) a coiler assembly that is adjustable for from 12- to 16-in. cans.

The continuous filaments (tow) enter the cutting area in a homogeneous layer with a count of approximately 1½-million den. A high-pressure cutting roll cuts this lap into sheets of fibers that are then passed on to a combined combing and drafting arrangement, operating with alternately arranged pairs of gripping and needle rolls.

Suitably graduated feed and peripheral speeds not only insure fiber control and proper drafting, but also give a much-desired combing action that affects both ends of the staples and separates from these ends the undesirable residual matter that results from the severing process.

The parallel relationship of the fibers, which may have been slightly disturbed after the cutting operation, is at the same time automatically re-established. The web, now well opened and free from any foreign and residual matter, advances to two merging conveyor belts that turn both edges of the stock inwards so as to form a sliver.

A crimping box gives the fibers the adhesion necessary to hold them together during subsequent processes.

Circle T-9 on Reader-Service Card

Black-Light Inspection Unit Shows Up Defects

HIDDEN DEFECTS can be shown up clearly in a variety of materials when the ultraviolet light from this lamp is turned on them.

Circle T-10 on Reader-Service Card

A new, high-intensity, long-wave portable black-light inspection lamp for use in laboratories and industry has been announced by Ultra-Violet Products, Inc., 145 Pasadena Ave., South Pasadena, Calif. Called the B-50H Mineralight, the lamp is an intense 100-w. ultraviolet hand unit that operates on 110-v. a.c. It throws a powerful directional beam up to 30 ft. away.

The B-50-H is useful in detecting oil leaks in machinery or on fabrics, because under activation by ultraviolet the slightest trace of oil emits a bright glow. In addition, the lamp in combination with invisible fluorescent inks, dyes, or powders can be used for inspection operations, for the determination of flaws, and for the detection of improper coverage of protective coatings.

The lamp clamps rigidly to its non-tip base (containing the transformer) and can be permanently locked to any desired position. It has an easy-to-grip plastic handle and heavy three-conductor primary and secondary cords and is especially designed to burn cool. Radiation is absolutely non-injurious, as it is harmless to the eyes or skin.

Price of the lamp is $79.50.

Nickel-Plating Process Needs No Electrical Equipment

Kanigen, a new type of nickel plating that requires no electrical equipment and that has few limitations on its possibilities, has been developed as a modern plating process by General American Transportation Corp., 135 S. LaSalle St., Chicago 90, Ill. Pieces of any shape, size, and of almost any basis material can be plated with virtual zero porosity.

Under normal circumstances, zero porosity is achieved with minimum thickness of plate, even on extremely complicated shapes. The nickel deposited makes a plating of uniform thickness, even on screw threads.

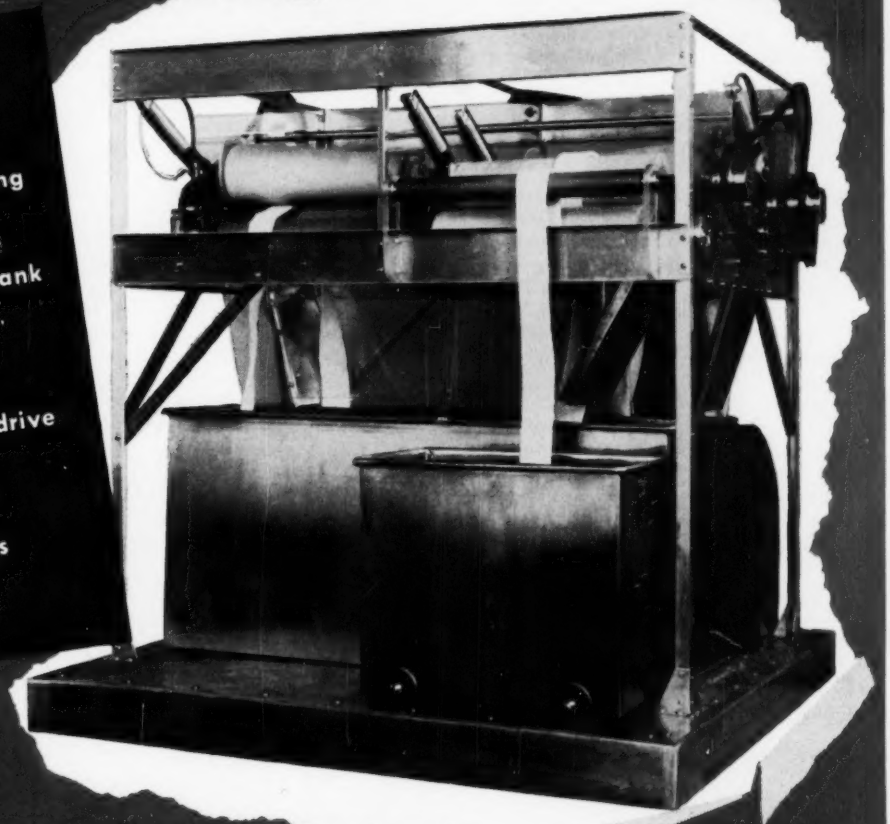
If desired, this thickness can be controlled, at present, to within 1/10,000th of an inch; and with refinements now under way, it is expected that this control can be further improved.

The new plate is a composition of nickel and nickel phosphide. Normal plating runs about 5% to 8% phosphorus and has a Vickers hardness of 550 to 650. Its adhesion to most basis materials is excellent.

Circle T-11 on Reader-Service Card

PROCTOR
CON-O-MATIC WASHER
offers these advantages

- Tension free operation
- Self-compensating rollers keep an even amount of fabric in each tank
- Less operator attention
- Simplicity of drive reduces maintenance
- Requires less floor space

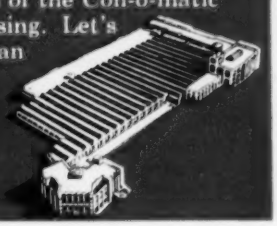


Scale Model—on display at Gallery Arts Exhibition

Proctor Con-o-matic washer combines simplicity of design with efficient operation and results in operating advantages impossible with conventional slack washers. Self-compensating rollers keep an even amount of fabric in each tank, without any effort or attention on the part of the operator. Through the use of tapered squeeze rolls (patent applied for), tanks are kept filled to the desired level automatically, thus insuring tension free operation.

Since synchronization is accomplished without elaborate drives, maintenance is drastically reduced.

Considered first as a washer, the basic principle used in the Proctor Con-o-matic makes it adaptable for use as a saturator, or in a dye process. It can be used wherever fabrics are to be processed in liquid. Proctor engineers are prepared to discuss procedures for determining other possible uses of the Con-o-matic washer for textile processing. Let's consider together how it can improve your operation.



PROCTOR & SCHWARTZ, INC. - 710 Tabor Road
Philadelphia 20, Pa.

For more information, write direct or use Reader Service post card.

Instrument Measures Tension of Filling Being Unwound

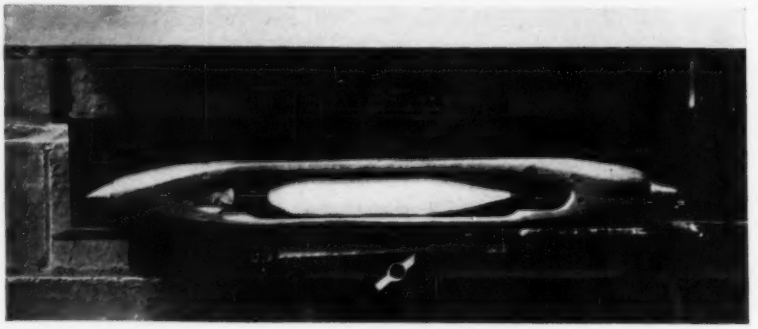
A new instrument to measure the tension at which yarn is unwound from the shuttle during weaving has been devised by Shirley Institute, and is being marketed by Shirley Developments Ltd., Shirley Institute, Didsbury, Manchester 20, England.

Known as the Shirley weft-unwinding tension meter, the instrument has four main uses. It can be used (1) to find the best tension for weaving when the type of fabric or loom is changed; (2) to find the best position for lamb's wool in the shuttle to reduce tension, (3) to standardize the tensions on looms weaving elastic filling and on looms weaving fabrics where tension is important; and (4) to match the tension in both shuttles in rayon crepe weaving.

The instrument consists of two parts, a shuttle carriage assembly and a winding drum assembly, and is mounted on the wall of the weave room with the measuring scale at eye level or just below.

To measure the tension at which the yarn will unwind during weaving, the threaded shuttle is placed on the carriage and the yarn led through a guide to the winding drum. The shuttle and carriage are steadied against the first surge as the motor is switched on and then left to follow automatically the increase in tension as the filling package unwinds.

The tension on the yarn causes the shuttle and the carriage to move toward the motor and slightly upwards, the tension being balanced mainly by the weight of the carriage and partly by the restoring action of the spring suspension. A ratchet holds the carriage at the maximum tension reading attained so that continuous attention to the instrument is not necessary.



VARIATIONS IN FILLING can be measured percentagewise and reasons for the variation ascertained by means of the Shirley Institute filling-tension meter.

A study by the weaving department at Shirley Institute showed conclusively that there was no significant difference between the mean tension on the yarn when it is unwound continuously, as happens in the instrument, and the mean tension on the yarn when it is unwound intermittently, as it is in the loom.

Experiments have shown that the instrument measures the mean tension of unwinding at any time except perhaps for the first 5% of the package, when the tension may decrease slightly.

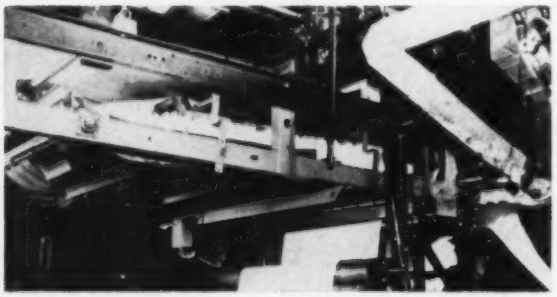
The instrument will record faithfully the rapid rise in tension often found at the end of a bobbin but will not respond to rapid plucks of yarn caused by slight entanglements.

Although the calibration of the scale depends to some extent on the weight of the shuttle, the error caused by using a shuttle weighing 16 oz. instead of a 12-oz. shuttle for which the instrument has been calibrated is only a few percent and is less than the random differences found between similar packages in the same shuttle.

The standard model is calibrated to read tensions of up to 100 grams. Provision is made on the carriage for the additional weights that are available to increase the maximum tension reading to 200 or 500 grams.

Circle T-12 on Reader-Service Card

Overhead Cloth-Storage Scray Saves Space



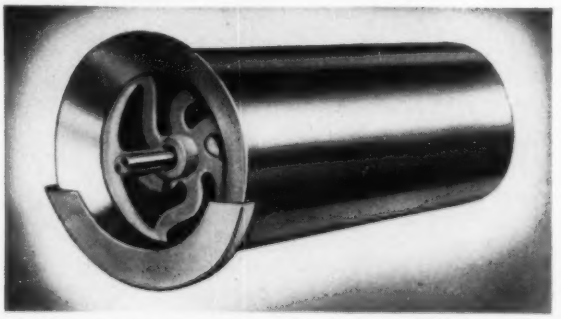
ANY PREDETERMINED AMOUNT OF CLOTH can be handled by this kind of overhead horizontal cloth storage scray that was built by Cook-P&N Machine Co., Inc., 365 Dorchester Ave., Boston, Mass. This model has a 500-yd. capacity that gives ample time for piecing fabric ends together without slowing down the before and after processes. The selvage is automatically kept in alignment.

This particular scray was built with the cooperation of Earl Clifford, general manager of Pontiac Bleachery in Westerly, R. I. This unit feeds a printing machine.

The scray can also be applied to dry cans or padders or anywhere an overhead scray will conserve floor space.

Circle T-13 on Reader-Service Card

Open-End Cooling Cylinder Sets Resin Finishes



COOLING-OFF TIME after resin treating is greatly reduced by running the fabric over this open-end water-cooled cylinder. Savings of a full day's time in processing have been reported.

A new Type-W open-end cylinder that is easily installed on calenders, embossers, tenter frames, or on Sanforized-process units is now being made by J. E. Carroll & Co., 112 Cambridge Street, Lowell, Mass. Three inches of water on the bottom of the cylinder will cool cloth below

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room temperature. A cooling-off period is eliminated, and the fabric finish is improved. Regular tap water is used with gravity feed from ¾-in. copper pipe.

Because of the unrestricted passage of air through the cylinder and the elimination of heat pockets, the unit operates efficiently with a small amount of water, without refrigeration.

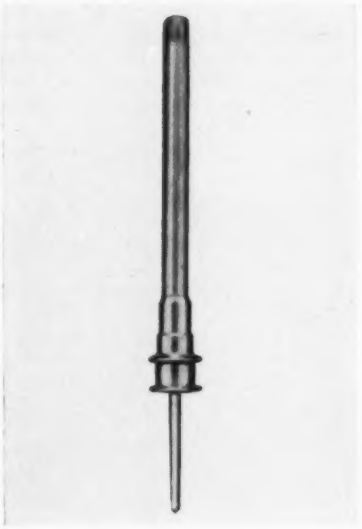
As the warm water rises, it overflows the flared end of the cylinder into the drain pan and is discharged. All parts of the unit are exposed; visual inspection can be made easily; there are no sealed-in chambers and no rotary joints.

The cooling cylinder can also be used as a pulley for the cooling of conveyor belts. A wide choice of cylinder diameters (12 to 28 in.) and face measurements (36 to 144 in.) are available.

One New England plant doing resin finishing has found these cylinders especially satisfactory. By eliminating the usual cooling-off period after heat setting, the finishing plant is saving a full day in processing time.

Circle T-14 on Reader-Service Card

Spindle Adapter Designed for Paper or Plastic Tubes



ALL TYPES OF TUBES, paper or plastic, can be run on spinning frames equipped with these adapters, regardless of the make of spindle in use. The whorl is so designed that it fits the company's modern antifriction running gear also.

A new spindle adapter that enables a mill to use existing spindle blades and that also allows modern bearing spindles to be substituted for the old blades, has been developed by Hartford Machine Screw Co., Box 1440, Hartford, Conn.

With the spindle adapter a mill can convert spinning, twisting, or special-duty spindles from wood-bobbin service to service with paper or plastic tubes, regardless of the make of spindle now in use.

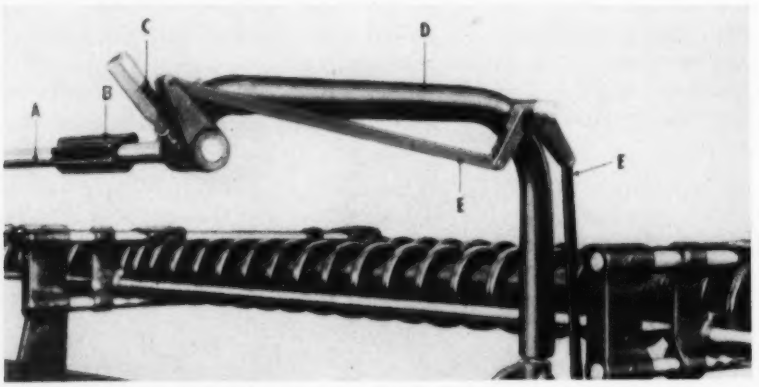
Onto the mill's original spindle blades in the first stage are mounted the adapters, consisting of new chrome-plated steel whorls that give unusual protection at the major wearing points, and an aluminum barrel surmounted by a cap, or seat, of steel to retard wear at that point.

Because of the unit's long-life construction, it is possible for a mill to make a second conversion at a later date, to prevent spinning-frame obsolescence.

When the time comes that a mill wishes to improve its spindles further, the adapters are returned to the company, where the old blades are removed and either ball-bearing or roller-bearing antifriction running gear is attached. This second adaption is very simple in that the whorl is so designed that it also fits the Hartford antifriction running gear.

Circle T-15 on Reader-Service Card

New Shipper Rod for Saco-Lowell Frames



COMPONENTS of the new shipper-rod assembly include *A* the shipper-rod itself, *B* the shipper-rod grip, *C* the safety lock, *D* the support bracket, and *E* the linkage to the switch.

A new roving-frame shipper rod that is simple in design and free from excessive weight has been developed by Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass. Fast in action, the new assembly is located above the roller beam, approximately in line with the front end of the clearer, and runs the length of the frame.

Conveniently located along the rod are black plastic grips. An easy turn of the wrist controls the movement of the switch. The whole movement of the rod is not over 135°; so it is now easy to jog the frame when putting up ends or preparing to doff.

A safety lock is provided to prevent the operation of the switch when gears are being changed or other work is being done around or under the frame.

The new shipper-rod motion is standard on new frames and can also be applied to existing frames without alterations or excessive machining.

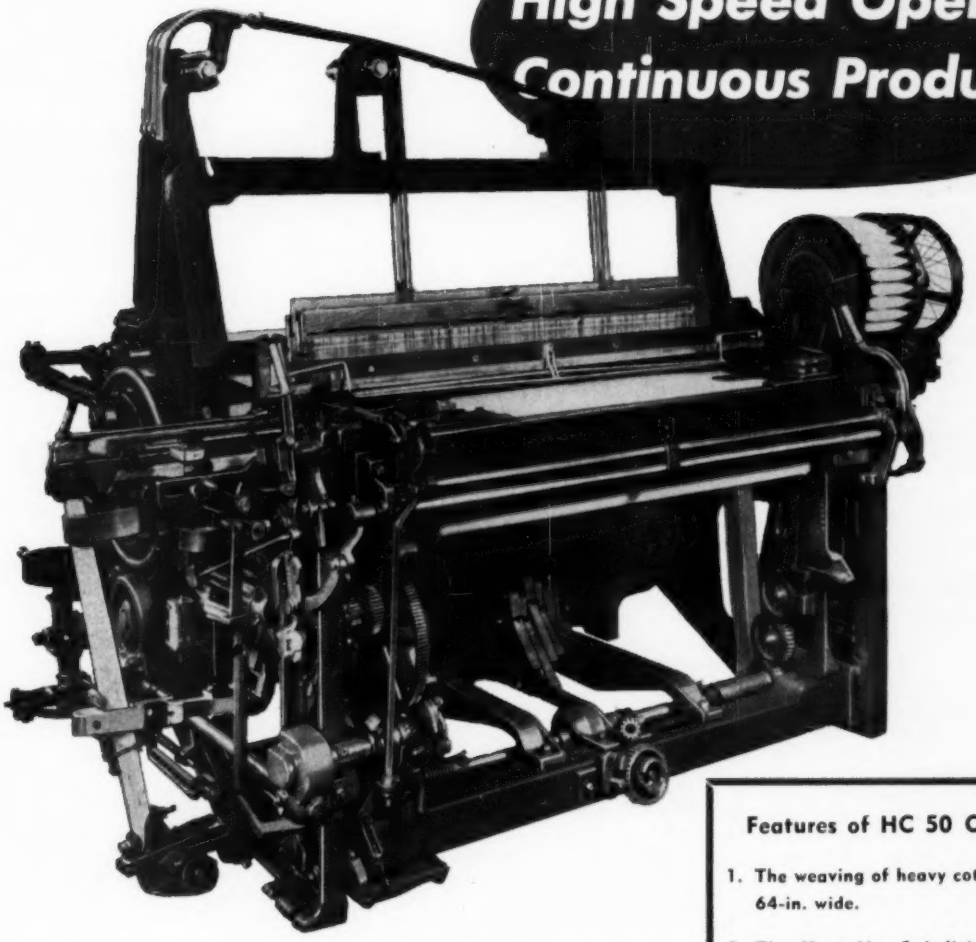
When a new assembly is put on, it is necessary to include a limit switch to stop the frame when the bobbin is full. The limit switch is placed under the roller beam and is actuated by the knock-off dog fastened to the cone-shifter rack.

Circle T-16 on Reader-Service Card

More **TEXTILE EQUIPMENT NEWS ITEMS** *start on page 230*

The New HUNT HC 50 Cotton Loom Gives

High Speed Operation Continuous Production

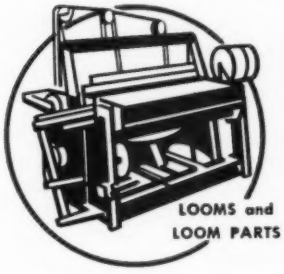


Features of HC 50 Cotton Loom

1. The weaving of heavy cotton fabrics up to 64-in. wide.
2. The Hunt No. 8 individual motor drive with demountable gear.
3. Roll and shaft, or Brown spring-top harness motion, or 20-harness dobby.
4. A crankshaft diameter of 1⅝ in. A camshaft diameter of 1 15/16 in.
5. Single, double or center fork filling motion.

The new HC 50 Cotton Loom will give you faster production with many features that insure trouble-free operation. This new loom has heavy construction in the sides. It is equipped with the improved Hunt Spreader, giving proper alignment with four bearings on the crankshaft and two additional bearings on the camshaft.

Write now for descriptive folder and further details.



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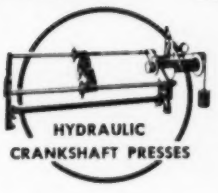

NEW *Dyes* AND *Chemicals*

New Dye Fixative Aids Wetfastness Properties

A new cationic dye-fixing agent produced by Hart Products Corp., New York, N. Y., is said to impart water resistance to direct dyeings on cotton, rayon, and other cellulosic fibers. This dye fixative, a straw-colored viscous liquid, may be used either alone or in conjunction with copper salts. It is claimed that the product will (1) eliminate bleeding and staining of prints during wet handling and wet pressing, (2) eliminate perspiration staining on dyed or printed fabrics, (3) impart water resistance to dyed yarns for knitted or woven sportswear, (4) improve wash resistance of cotton and rayon yarn for hose, and (5) eliminate staining of discharge prints in fabrics where the ground has been dyed with a direct color.

Circle D-1 on Reader-Service Card

New Size Eliminates Water Spots On Loom-Finished Taffetas

A recent development of Monsanto Chemical Co., Boston, Mass., Stymer LF is said to be a durable and nonspotting size for solution-dyed filament acetate. The product, put in solution with 12% ammonium hydroxide, is compatible with lubricants and softeners required for modification of hand.

Successful formulas used in mill runs include: 46 lb. of Stymer LF, 5½ lb. of ammonium hydroxide (26° Baume), and 5 lb. of softener. The finished mix totaled 100 gal.

Another mill used 50 lb. of Stymer LF, 6 lb. of ammonium hydroxide, and 7 lb. of softener for a 100-gal. mix.

To mix, (1) draw ⅔ of water to be used; (2) heat to 160° F., then add ammonium hydroxide; (3) start agitator and pour in Stymer LF; (4) cook for 30 min. at 160° F.; (5) dilute softener with hot water and add to mix; then (6) dilute to finished volume and store at temperature used in size box.

Circle D-2 on Reader-Service Card

New PVA Finishing Agent Does Not Block or Stick

A new vinyl acetate copolymer made by American Polymer Corp., Peabody, Mass., is said to be especially suitable for use in textile finishes.

Ordinary polyvinyl acetates, owing to their thermoplastic behavior, tend to block, stick, or build up on the calenders or drying cans. Polyco 503 shows excellent resistance to blocking and sticking during drying or calendering, the makers claim. The product is a very stable emulsion under normal storage and handling conditions. It should not be exposed to freezing conditions. It may be diluted infinitely with water and may be stored indefinitely at low concentrations provided mild agitation is used to redisperse any resin that might settle out. It will not set up or gel in the padding box or drain lines.

Equipment is readily cleaned by simple flushing with water or by use of a steam hose to strip any dry film adhering to the equipment.

The finishes deposited from Polyco 503 are unusually lightfast and heat resistant. They are unaffected by mildew, bacteria, or fungi.

The finishes do not require curing. Normal drying conditions are usually satisfactory, but drying at 200° F. or higher improves the washfastness of the finish.

Circle D-3 on Reader-Service Card

Three New Indicators Do Work Of Six

The three double-endpoint indicators now available from Fisher Scientific Co., Pittsburgh, Pa., undergo two color changes, one in a low pH range, the other in a high pH range. Thus, each indicator does twice the laboratory work of a single-indicating solution like phenolphthalein and other common indicators.

The indicators are: Cresol Red, 0.02%, with two pHs, 0.2 to 1.8 and 7.2 to 8.8; Thymol Blue, 0.04%, with two pHs, 1.2 to 2.8 and 8.0 to 9.6; and Metacresol Purple, 0.04%, with two pHs, 1.2 to 2.8 and 7.6 to 9.2. Thus, a pH range from 0.2 to 9.6 may be checked.

For optimum ease and versatility, these indicators are offered in neutral solutions. This means that they may, at once, be used in either of their ranges without pH modification.

Circle D-4 on Reader-Service Card

New Nylon-Whitening Agent Is Fluorescent

A new optical whitening agent designed for use with nylon, wool, and other fine fabrics has been introduced by Hilton-Davis Chemical Co. Div., Sterling Drug Inc. Known as Hiltamine Arctic White NT, the optical bleach is the latest addition to the company's line of whitening agents.

When applied to the fabric, the agent's chemical structure permits it to absorb invisible ultraviolet light, the energy from which is converted to visible light in the blue range of the spectrum. Thus new light is added to the total surface reflection, the company claims.

Circle D-5 on Reader-Service Card

Flameproofing Treatment for Cotton Uses Available Chemicals, Standard Equipment

U. S. Dept. of Agriculture chemical research has developed an improved method for treating cotton fabrics for flame resistance.

THPC, tetrakis (hydroxymethyl) phosphonium chloride, is the basic chemical compound used in the new process. Urea and methylolamine are two commonly known and readily available component parts of the treatment. THPC is made by a technique feasible for commercial production from inexpensive chemicals.

The new finish is applied on standard equipment. The process is similar to regular resin-treatment methods. The solution is applied to the cloth, dried, and cured at 285°F. Then the cloth is washed to remove unused chemicals.

Wilson A. Reeves and John D. Guthrie of the Southern Regional Research Laboratory, USDA, New Orleans, La., developed the process.

Fabrics treated with THPC are said to retain the flameproofness after more than 15 launderings. Wrinkle resistance and absence of afterglow are other desirable features of the treated cloth.

Besides the primary use for such a process, that of producing protective clothing for our armed forces, the treatment holds promise of popularity for drapes, upholstery, bedding, and other household fabrics.

Let MODERN Top Rolls pay you 30% YEARLY RETURN ON INVESTMENT

No installation techniques or rebuilding needed

Just replace existing rolls with CLEANDRAFT and CLIMAX—they pay for themselves every 3½ years

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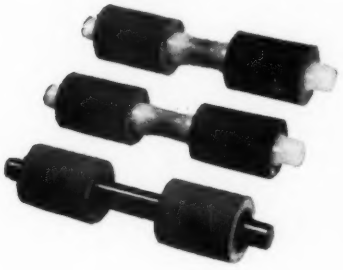

Based on 30s yarn, cost is returned in 3.55 years

— eliminate all oiling expense.

— greatly reduce picking and cleaning cost; cycle extended to as much as once in 8 weeks.

— greatly improved quality of yarn; improved uniformity in size and break.

— cleaner yarn free from oil.

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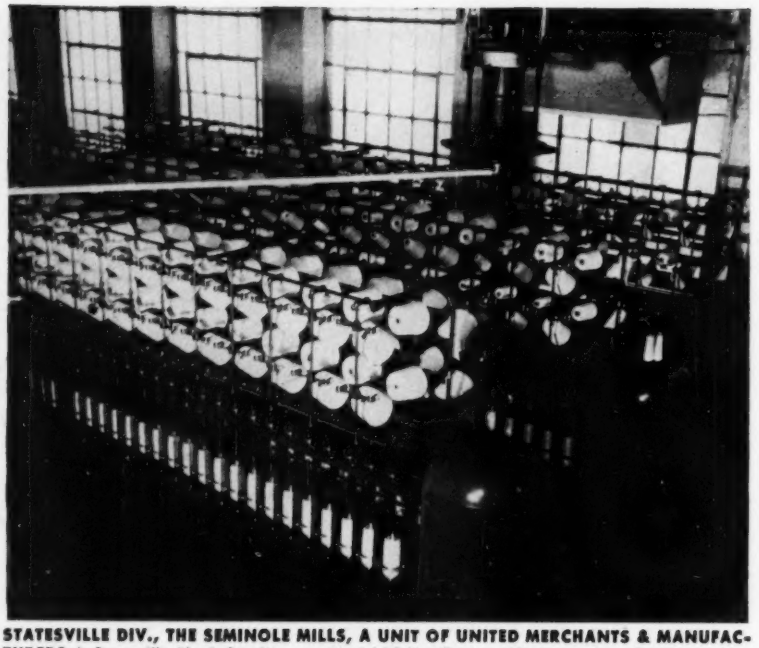
United Merchants & Manufacturers, Inc. reports great flexibility in use of MODEL 10 RING TWISTER



STATESVILLE DIV., THE SEMINOLE MILLS, A UNIT OF UNITED MERCHANTS & MANUFACTURERS, in Statesville, North Carolina, uses Model 10 Ring Twisters. Plied yarns from the large twister packages are used as direct warping and winding supply.

"The only ring twister that gives us flexibility for all our yarns."

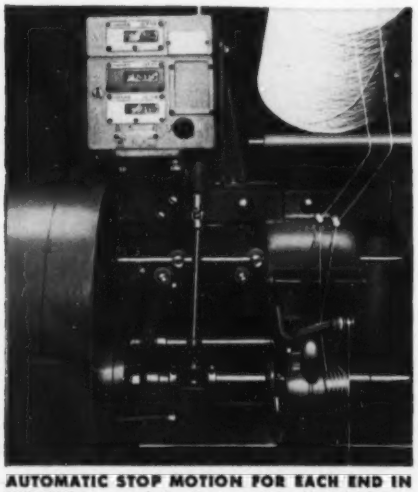
STATES THIS TEXTILE MANUFACTURER

United Merchants & Manufacturers, Inc. believes in thorough testing of basic equipment used throughout their mills.

That's why when United Merchants & Manufacturers installed our Model 10 Ring Twisters in their Statesville Div., The Seminole Mills, a number of test runs were made. Seminole works only with synthetic yarns but the Twister was tested on other yarns as well—glass, nylon, cotton and combination yarns. In this way, the extent of the use of the Twister in their Mills was determined.

"Test runs showed," says United Merchants & Manufacturers, "that the Universal Model 10 Ring Twister is the only ring twister that gives us the flexibility needed for all of our yarns."

Endorsements such as this are typical of the comments made by users of Universal twisting and winding equipment—and evidence why Universal is the world's largest manufacturer of this type of textile machinery. More packages of every shape, size and fiber are twisted and wound on Universal machines than on any other make.



AUTOMATIC STOP MOTION FOR EACH END IN THE PLY is an exclusive feature of the Model 10 Ring Twister.

EXCLUSIVE AUTOMATIC STOP MOTION

Only the Model 10 Ring Twister has automatic stop motion for each end in the ply. Located just above the feed roll it stops the spindle and feed roll instantly whenever a break or runout occurs.

As a result, drop ply cannot get into the packages — roller laps are eliminated — and ends are tied in the singles before twist is inserted, resulting in smaller, less troublesome knots. If you are not already using Model 10 RingTwisters, why not plan on installing them now?

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Round Table

"RESINS ON RAYONS" DRAWS CONSTRUCTIVE CRITICISM

Dear Editor:

We were much interested in your article entitled "How to Apply Resins to Spun Rayons," which appeared in TEXTILE WORLD in January. It is good to see such a comprehensive review covering the whole process in this manner.

We have been in touch with the processes for applying resin ever since the days of the original licenses, and we therefore feel that we ought to make one or two comments on the article.

With reference to the boiling off of fabrics that are subsequently to be dyed and crease resisted, we think that insufficient emphasis has been placed on the necessity for a very thorough boil-off. Your contributor says correctly that starch residues are harmful; but, in our opinion, the method that he described for boiling off would be insufficient to remove traces of dextrin and starch sizes, although doubtless with gelatine sizes the treatment would be adequate.

It is looked on as of paramount importance with British and Continental finishers of spun rayons that full relaxation should be applied throughout the drying processes. The first drying after the dyehouse may be carried out on a loop dryer; but we find that dryers of the Airlay type give more complete relaxation, and the final processing thereafter is much easier. The Airlay dryer now seems to be more popular in Europe than in the States, where it originated. The experience on this side of the Atlantic is that the relaxation obtained with this machine is better than with any other.

A further very important stage of the drying is that which occurs immediately after impregnation. Our experience is that correct relaxation at this stage of drying is more important even than at the initial and final stages. The use of an overfeed pin tenter with modern automatic methods of guiding is almost universal for this work and does show very great advantages in the handle and quality of the final product.

The output of these machines is quite as good as that obtainable on a clip tenter, provided the latest methods of guiding and handling are used. The resultant fabric is a great deal fuller in handle and certainly makes the best of the weaver's work.

We might add a note on the drying at this stage. Harsh finishes may be caused by resin migration during the very early stages of drying after impregnation. It is important that the initial stage should not be too violent.

Provided that complete relaxation has been obtained before the baking processes, the final drying may be carried out either on a pin or clip tenter. The pin machine is still preferable as it gives complete control over the dimensions. The use of a pin machine, however, to try to recover fabric that has not been allowed to relax all the way through the process does not give a permanent stabilization to the fabric.

Our experience is that when the correct equipment is used during these earlier drying processes especially, there is no need for compressive shrinkage to obtain stability at the end of the processes.

We hope these comments and expressions of opinion will be of service to you and to the readers of your excellent paper.

K. S. LAURIE

John Dalglish & Sons Ltd.
Glasgow, Scotland

(Thank you, Mr. Laurie. When a TW article stimulates such intelligent comment, it has served its purpose.—Editor)

REWORKING FLAT STRIPS CAN SAVE MONEY

Dear Editor:

Reduction or recovery of the good spinnable cotton in card-flat strips is receiving increased attention. Certain speeds and settings can reduce the total amount of strips and the percentage of good fiber contained in these strips. Even with these improved adjustments, there still remains a large proportion of good fiber in waste.

Some of your fiber-length-conscious readers may be interested in some experiments made in a medical-gauze and tobacco-cloth

(Continued on page 254)

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

"I understand she averages two wolf whistles per six inspections!"

Kinks AND SHORT-CUTS

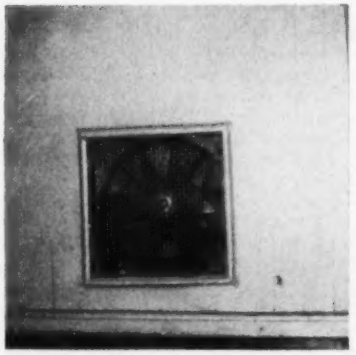
Homemade Cooling System Eliminates Corner "Hot Spots"

We had some corners in our spinning room in which we were unable to control the heat. I had an idea we could use the cool air under the mill; so I devised this fan-duct system. Temperature in the corners dropped 14 to 16 degrees; so the system really works.

First I cut a hole 8 in. wide and 14 in. long in the floor behind the wooden partition that forms one wall of the spinning room. Over this hole, but against the partition, I put a flat iron frame to support a small motor and 30-in. fan. (The space you have to cool will govern the size motor and fan you'll need.)

Then I cut a hole in the spinning-room wall about 14 in. from the floor and big enough for the fan. I covered the hole with heavy protective wire, of course.

At the back I closed in the fan and the holes with sheet metal to make a good drawing chimney for the fan.



FRONT VIEW shows the fan mounted about a foot up from the spinning-room floor in a "hot" corner.

BEHIND THE WALL is the secret of the system. Cool air is drawn from under the mill through a hole in the floor.

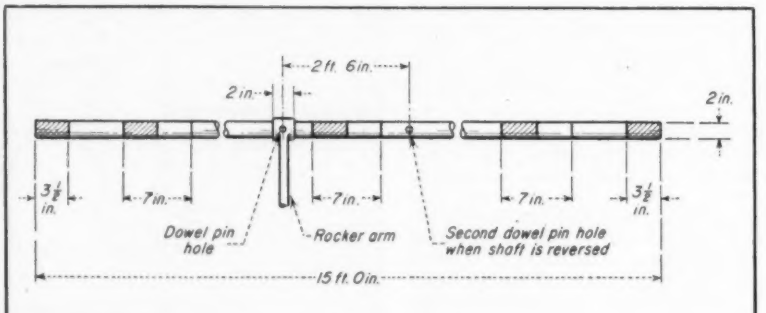
Now the cool air is drawn from under the mill, and there are no more "hot spots" to cause poor running conditions in the spinning room. *J. B. Boyter, Dallas, N. C.*

Metallizing Cuts Costs of Tricot Rocker Shafts

We used to braze the worn areas on our tricot rocker shafts because new shafts cost about $80. Brazing cost quite a bit, too, and took a long time.

We saved a lot of time and money by reversing the shaft and changing the position of the rocker arm. When the bearing surfaces wear now, we metallize them at half the usual brazing cost.

Each of the worn areas is turned down 1/8 in. in diameter and rough threaded with a Rex AAA Carbide tool. Metallizing of the 25 carbon steel is done with 1/8-in. wire in a Metco 2E gun. The metallized areas are then turned down to the original 2-in. dia.



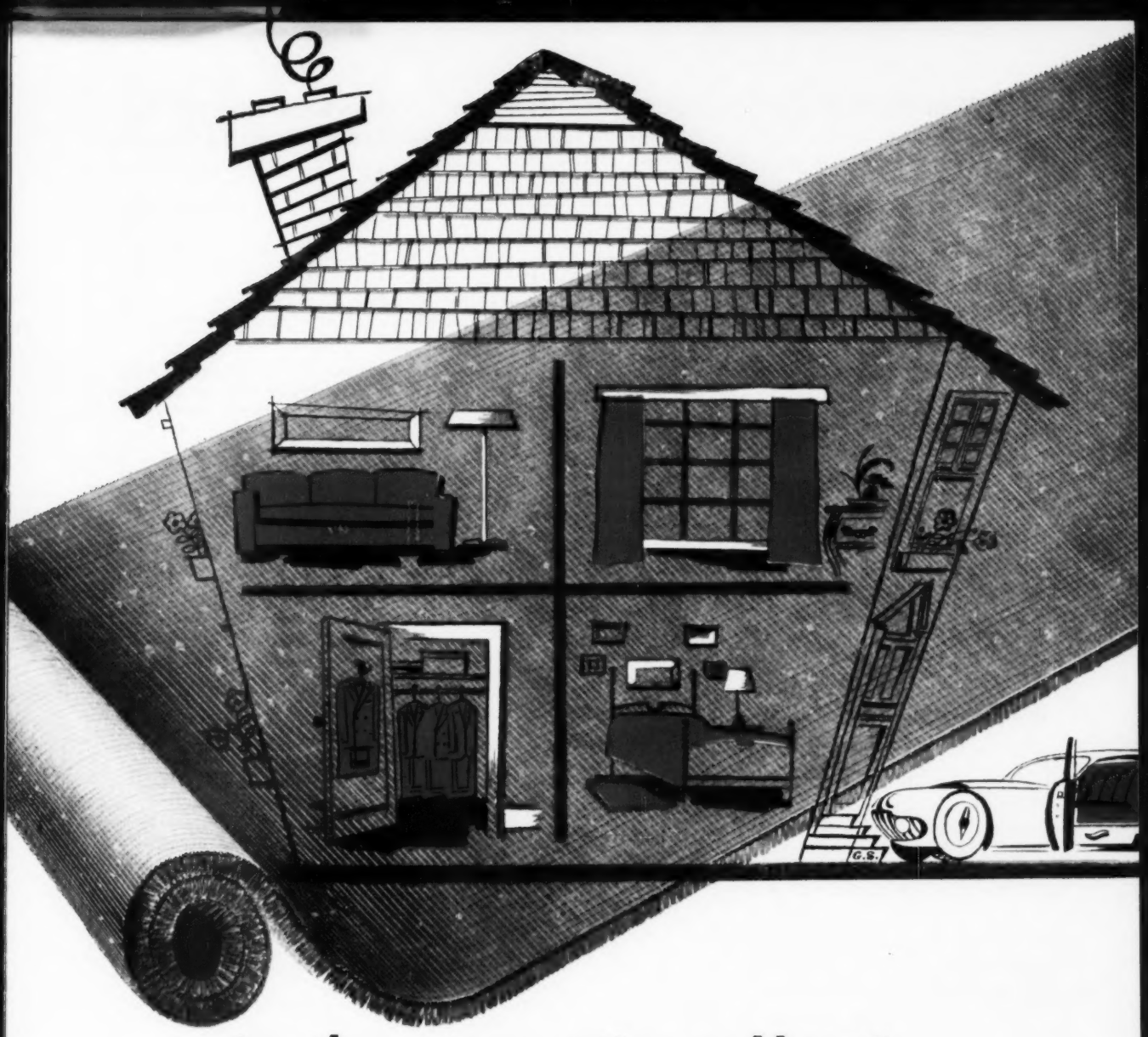
REVERSING the rocker shaft changes the bearing surfaces. Cross-hatched sections show the original bearing surfaces. New surfaces are the 3½-in. sections just to the right of the three bearing surfaces in the center of the shaft.

Save Time by Marking Your Hosiery-Machine Cylinders

When we overhaul our Komet machines, we remove all the sliders. The sliders must be put back in the cylinder in their correct position—the first long knitting butt slider must ride over the center cam on its first oscillation.

The machine builders recommend that the machine be put in the heel. A certain distance is measured off along the cylinder to determine the right position for last long-butt slider.

We dispensed with this operation by marking the cylinder wall with a pin punch between the last long-butt slot and the first short-butt slot. The marking was done before the sliders were removed. We were careful to replace the sliders so that the long butts were placed to the right of the marked wall.



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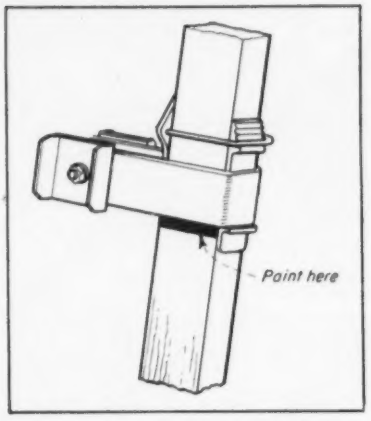
Mark Your Picker Sticks To Check Picker-Stick Power



PAINT A RED STRIPE on the stick. No lug should be set below the stripe.

We have had trouble with low lugs and with too much power on our picker sticks.

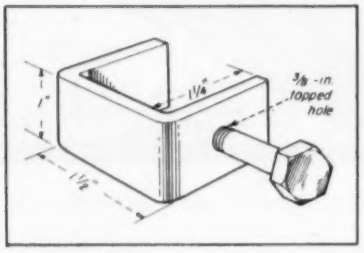
Low lugs have a tendency to throw the shuttle into the top shed of the warp rather than in a true line. At other times, low lugs throw the shuttle too hard and cause broken warp ends, broken filling, and kinky filling.

We now use a jig to mark all our picker sticks before they are given to our loomfixers. All picker sticks are marked at a position that shows when the lug is level. If a lug is dropped below the mark, we know immediately that the loom needs attention. Sometimes we have to overhaul the picking motion to raise the lug to its correct position.

The only disadvantage of the marked sticks is that it costs us part of a man's wages and a small amount of paint to mark them.

The advantages are that our picking motions are always in good mechanical condition, we have few seconds from slack picks and broken warp ends, and we have few slam jobs. *Bernard Dixon, Danville, Va.*

Knitting Stop Motion Fixed With Bracket and Bolt



EASILY MADE BRACKET saves time when you replace chain pins on circular knitting machines.

The needle-detector stop motion on our circular knitting machines is operated by a chain that rides over a pivot pin screwed into the side of the machine frame. Constant wear had broken this pin off on one of our machines. Removing the pin would have required stripping off the drive shaft and brake drum and drilling and tapping a new hole.

To save time and loss in production, I made a bracket from a 4 x 1 x ⅛-in. steel strip. The piece is bent into a U, and a ⅜-in. hole is drilled and tapped in one end. The bracket is clamped on the top ring by a bolt screwed into the tapped hole. The bolt takes the place of the pin that the chain rides on.

The machine was stopped for only a few minutes to adjust the chain, and the bolt is just as good as the original pin. *W. M. Scott, Enfield, England*

Homemade Scrapers Keep Weave-Room Floors Clean

Lint and oil used to be hard to remove from the floors around and underneath our looms when warps were out.

We made two inexpensive scrapers that we now use to keep the floors clean.

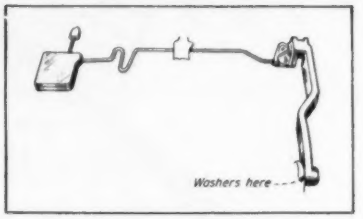
The first scraper is made from a new garden hoe. The hoe is heated in the blacksmith's shop and the gooseneck is straightened. The cutting edge of the hoe is filed until it is sharp. The hoe is then used as a scraper to cut accumulations of oil, grease, and lint under the looms.

Our second problem was cleaning around looms without damaging the finish on our floors. All floors are sanded and finished with a sealer. Most scrapers that will remove a film of lint from the floors will also remove the floor finish.

To make a scraper to remove lint from the floors, we used a piece of hardwood 10 in. long, 5 in. wide, and 1¾ in. thick. A 1-in. hole was bored 1 in. into the center of the 5-in. surface at a 45° angle. An old broom handle 4 ft. long was inserted in the hole and held from the bottom with a wood screw. Card clothing was tacked over the bottom surface of the wood block. When the clothing becomes caked with lint or worn, it is replaced.

This scraper keeps the floor around our looms clean and does not mar the finish surface of the floor. *Charles D. Westbrook, Trion, Ga.*

Stop Slide Vibration To Reduce Knocked-Out Pieces



REMOVE THE FILLING-FEELER SLIDE and place a washer on each side of the stud to remove lost motion and reduce knock-outs.

We used to have a lot of filling pieces knocked out of our E-model Draper looms. We watched the transfer motion for a long time and finally found that the filling-feeler slides were causing the trouble. The slides were vibrating from the motion of the loom, and this vibration caused the lifter-lever connecting rod to contact the cam-follower trip.

The result was a lot of partially full bobbins of filling in the bobbin can. The pieces were costly not only because they made a lot of filling waste but also because weave-room production was reduced.

We placed a small, flat washer on each side of our filling-feeler slides. Since this washer reduced the vibration of the filling-transfer motion, fewer pieces are knocked out of the looms.

The washers are placed on each side of the stud for the feeler slide. The fit must be close to prevent binding at the sides. Often the washers must be filed in thickness, and occasionally two washers must be used on each side of the slide.

An experienced maintenance man or an experienced loomfixer should do this work to get best results. *Bernard Dixon, Danville, Va.*

An Easy Way To Remove Grease From Drive Units

It used to take us a long time to remove old grease when we had to inspect the gears or remove dropped screws from the drive units of our knitting machines.

We have speeded this method up by pouring into the drive unit a quart of near-boiling light lubrication oil. We leave the oil for a few minutes to melt the grease, stir the oil with a screwdriver, and remove the drain plug. We collect the grease in a can placed under the drive unit. *W. M. Scott, Middlesex, England.*

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Benjamin "Vapor-Tite" Units make it possible to provide modern fluorescent lighting for locations with moisture-laden atmospheres. They are specifically built to combat the corrosive effects of such humid workplaces as textile mills, laundries, bottling plants, food processing operations, etc. A solid armor of porcelain enamel defies humidity, steam, dirt and vapors. This is the "Life-Time" surface that cannot wear, scratch, become dull, deteriorate or corrode because it is literally "glass fused to steel".

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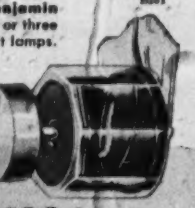

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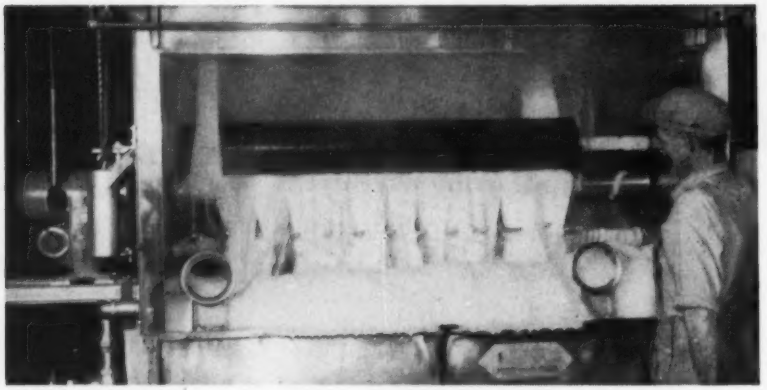
Nip Roll in Dyebeck Aids Nylon-Tricot Dyeing



A-NIP-IN-A-BECK is a new wrinkle in nylon tricot dyeing. Stainless steel running against neoprene provides a nip that adds efficiency to scouring and dyeing.

The nip roll is in a conventional dyebeck, rigged for continuous-chain dyeing, at Kingsboro Silk Mills, Inc., Chattanooga, Tenn. A variable-speed drive is used to synchronize nip speed with oval-reel speed, an adjustment that is necessary when different weights of goods are run.

The modification was made by the mill because the makers of the beck did not sanction the use of nips on tricot. However, the mill claims that the nylon is not harmed and that dyeing and scouring are more efficient.

Turn Pattern Chains Around To Make Them Last Longer

Many of our cloth constructions on dobby-equipped looms are woven with 10 or less harnesses. This condition requires the use of only the front half of our pattern chains. Consequently, the front half of the pattern chains wears out and the back half is undamaged.

We turn the chains around when they become worn at the front and use the back half of the chains. Our pattern-chain builder builds a few extra chains, and our loomfixers change the chains when warps are out.

There's no extra cost in turning the chains since no new materials and little additional labor are needed. Now our pattern-chain life is doubled.

Bernard Dixon, Danville, Va.

[*This idea will work well on Draper looms and on other looms where the box motion is not controlled from the pattern chain. It's dangerous to reverse chains where the pattern chain indicates the filling pattern, because the last peg will make balks in the filling pattern. – Editor*]

Double Pull-Down Springs Help on Heavy Weaves

On heavy weaves, particularly staple-rayon weaves, the warp ends are too far above the race plate when the bottom shed is down. This condition causes overshots in the warp and broken warp ends.

We now use two pull-down springs on each end of the harnesses. The two springs keep the bottom warp shed down to our 1/32-in. standard setting. We get higher production and better cloth since we are using double springs.

The disadvantages are:

1. It takes the warp man longer to tie on a warp when he uses two springs.
2. The cost is greater because two springs are used where only one is ordinarily used.
3. The dobby jacks, jack backs, and top and bottom hooks wear faster.

But the better running condition of the loom compensates for the disadvantages that are encountered. *Bernard Dixon, Danville, Va.*

$500 for Best Kink in 1953
$25 for Best Kink Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know many Kinks and Short-Cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your Kink may win the $500 check for the best Kink of the year or the $25 check for the best Kink of the month; maybe both!

Send in your Kink now. There is always a contest going on. The more good Kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every Kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it—we will pay you extra if you do and we can use it.

Look over the Kinks in this and other issues. You will get ideas you can use as well as inspiration for Kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

Your published Kink will be judged impartially by other mill men. In cases of ties, duplicate prizes will be awarded.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1953.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final.

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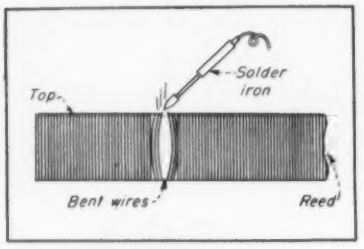
Use a Soldering Iron To Repair Bent Reeds



JUST APPLY THE IRON directly to the reed. The wires will come loose, and the reed can be repaired.

Our weave room is a small one, and we do not have a special reed repair man. Each shift overseer repairs bent reeds that are caused by bangoffs and loose shuttle screws.

To repair a bent reed, we remove the reed cap and heat the top of the reed with a soldering iron. While the solder is still hot, we straighten the bent wires with a pair of concave-convex reed plyers.

When the metal cools, the reed is straight again.

This method saves a lot of reeds that would otherwise have to be removed from the loom and discarded. *Alfred C. Bourbeau, Shrewsbury, Mass.*

Dowel Reduces Warp Breaks On Electric Stop Motions

The front control bar of the electric warp-stop motion on rayon looms becomes chafed by the warp ends on the other contact bars as the warp ends are raised. The chafed contact bar cuts the warp ends and causes them to be broken as they pass through the reed.

To correct this fault, we now use a ¼-in. wood dowel under the front contact bar.

We do it this way:

1. Loosen the wing nut and remove the space collars from the contact bars.
2. Use a 1⅛-in. open-end wrench to loosen the two front nuts on the angle iron that hold the spacers.
3. Lift the front contact bar and insert the wood dowel underneath the contact bar.
4. Replace the disturbed parts.

The dowel extends from the spacers on one end of the stop motion to the spacers on the other. Since the dowel is loose, it revolves as the warp moves forward; and it does not wear or become rough.

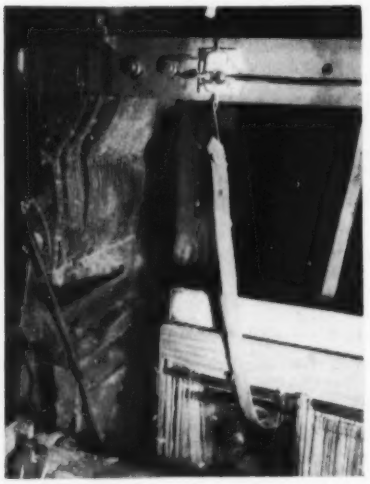
We've cut down on our warp breaks considerably since we started using the dowels.

We use them on both Draper and C&K looms. *B. F. Blackwell, Greenville, S. C.*

Magnetic Bobbin Retriever

PICKING UP BOBBINS from under looms is an easy job with a magnetic retriever. As shown here, a piece of heavy wire with a handle shaped ot one end is attached to the center of a magnet. The magnet is used to pick up a quill by attracting the metal rings around the head of the quill. The retriever can also be used to pick up travelers, bolts, tools, small machine parts, etc. *W. C. Westbrook, Trion, Ga.*

Arrest Weaving Defects From Broken Harness Cords



A SWITCH AND STRAP are used on each end of the loom. The wiring is all out of the way, and none of it dangles around.

When harness cords or leaders wire break, they often cause floats in the cloth before weavers or loomfixers can catch the defect.

We have added stop motions to our harnesses, and the loom now stops instantaneously if and when a harness drops.

We bored two holes near each end of the front top lengthwise girder. The holes were tapped for #3839 machine screws, and a make-and-break switch was screwed to the girder.

A wire hook was inserted in each of the plungers on the make-and-break switches.

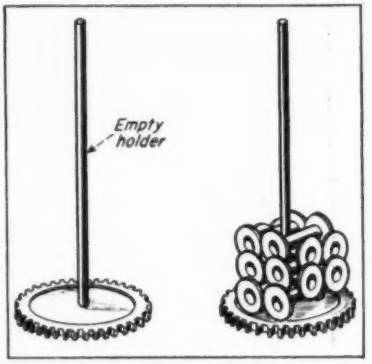
A leather or fabric strap is fastened to the hook at the switch, run through the harnesses underneath the ribs, and fastened to the back top lengthwise girder. The strap has holes punched in each end so that the strap length can be adjusted. Little slack is left in the strap, but the strap must not be allowed to bind the harnesses in their movement.

One pole of the make-and-break switch is grounded to the girder, and the other pole is wired to the solenoid for the warp stop motion.

A broken harness cord or leader wire will short out the switch and cause the looms to stop.

Our seconds have reduced since we added the stop motion.

Double-Head Bobbins Stacked on Upright Pipe



A BOBBIN HOLDER for keeping a supply of double-head bobbins convenient to a machine can be made as shown here. It is made of 1-in. pipe welded to an old gear wheel or fastened to the wheel hub with a setscrew. The bobbins are stacked crossways as shown. The heads of one pair of bobbins lock the barrels of the pair under it, keeping them in a neat pile.

One of the features about the holder that recommends it to the industry's attention, is that it takes up little room. *Hebe Moshe, Petah Tikva, Israel.*

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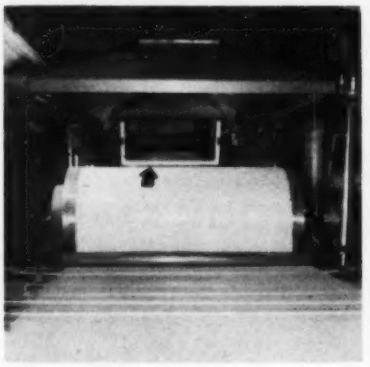
Mirror Above Slasher Prevents Major Breakouts

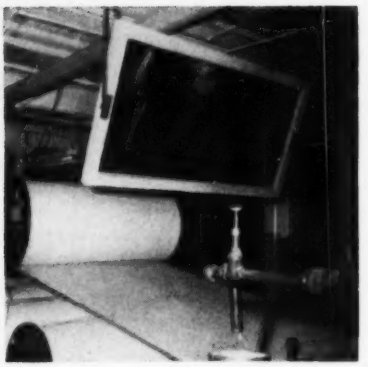
We formerly had some trouble with selvage breakouts behind the slasher, because the back man can't keep his eyes glued to one spot all the time. Besides, we don't think a back man is necessary for every slasher.

So we hung a mirror from the ceiling just behind the size box. Now the slasher tender can check for breakouts and watch the size level from the front of the slasher.

The 30x62-in. mirror is framed with 2x3-in. stock and has a 1/2-in. plywood backing. It is hung with 3/8x11-1/2-in. flat iron bent at the ceiling and fastened at the mirror to 5-in. sections of 2-in. angle stock. *Paul Stallings, Marion, N. C.*



SLASHER OPERATOR can see the size box easily from the front, in the mirror.



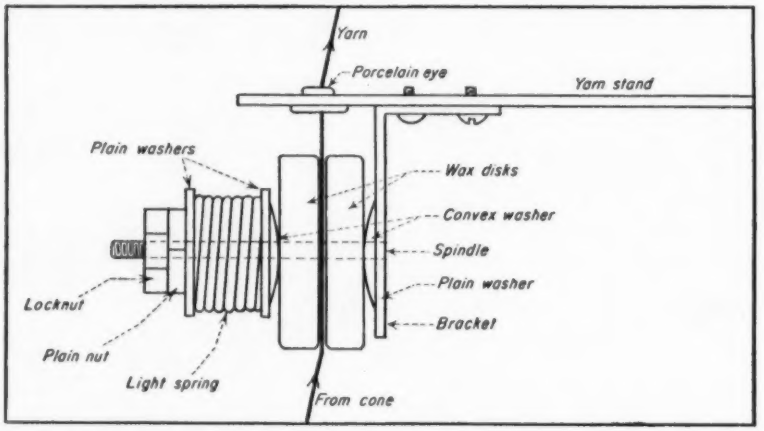
MIRROR IS MOUNTED just behind the size box and angled to reflect the size box.

This Waxing Attachment Helps Needles and Yarn

I've found that paraffin wax softens and lubricates the yarn and reduces fly. It also benefits needles and prolongs their life by keeping the rivets lubricated.

I built a waxing attachment to fit directly on the knitting machine. Cymbal-tension parts can be used to make the attachment. If these parts are not available, the device can be made by threading both ends of a 1/4-in. rod and screwing one end into a right-angled bracket.

The bracket is fixed to the yarn stand with two 6/32 screws. The following parts are placed on the threaded spindle in this order: (1) a cymbal-tension disk, (2) two paraffin-wax disks, (3) a plain washer, (4) another cymbal-tension disk, (5) a light compression spring, (6) another plain washer, (7) a plain nut, and (8) a locknut.



CYMBAL-TENSION parts can be used to make this knitting-machine waxing attachment that is fitted to the yarn stand above the cone.

The disk tension keeps pressure on the wax as it wears down. Rapid fluctuations of the yarn as it peels off the cone tend to reduce the grooves that would appear if the yarn passed through a lower porcelain eye. The convex disks allow the wax disks to turn slightly and wear evenly. *H. J. Haas, Martinsburg, W. Va.*

Hinged Warp Truck Handles Full and Empty Beams

FLIP THE BLOCKS down and the truck is ready to transport a full beam. Flip the blocks back up to take care of an empty beam.

We use the same warp trucks to take full warps to the looms and return empty ones to the slasher room. The trouble is that a warp truck low enough to position full beams in the loom permits the heads of an empty beam to drag as it is being taken to the slasher room.

We now use hinged trucks that move both full and empty beams satisfactorily.

The trucks are made the correct height to handle full beams, and the ends are padded to prevent damage to the yarn on the beams.

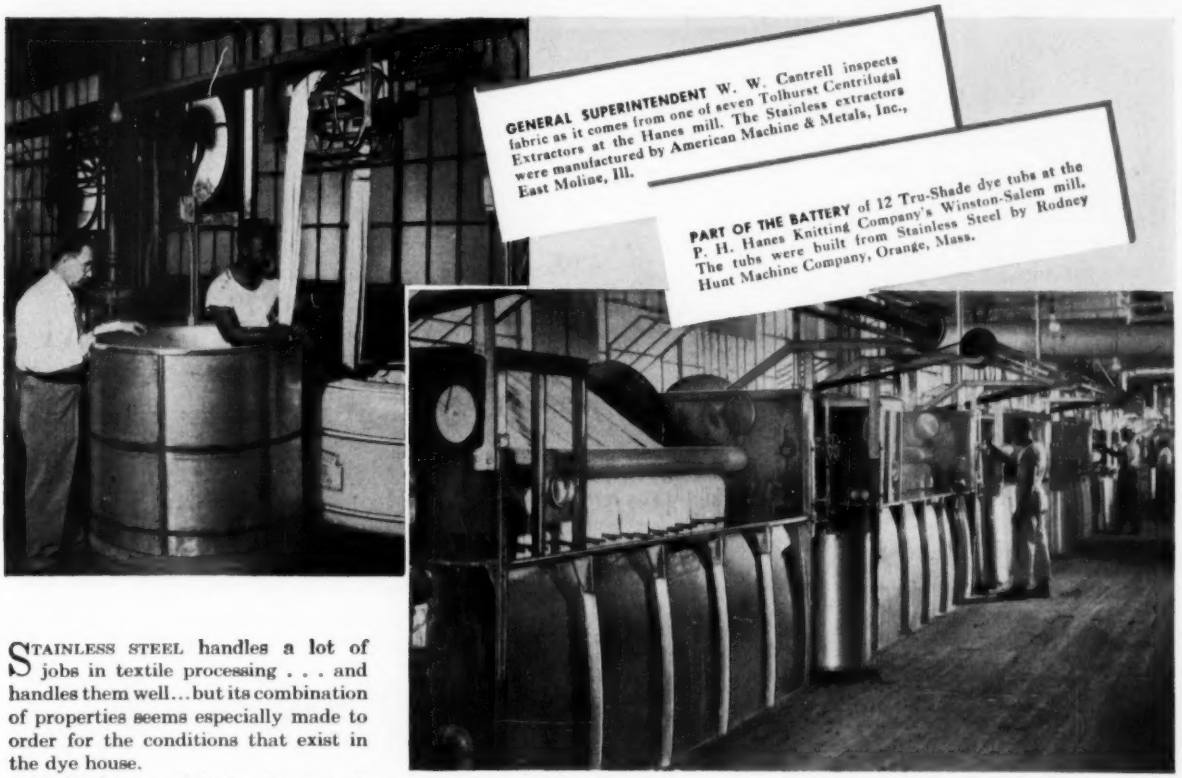
Wooden blocks are cut to fit into the padded concave surface of the trucks. Then the tops of the blocks are cut concave to fit the barrel of empty beams. These blocks are not padded.

The blocks are hinged to the center of the padded surface of the trucks so that they swing down inside the truck when a full beam is being transported. The blocks are raised over the padded surface when an empty beam is moved, and the extra height of the blocks prevents the heads of empty beams from dragging on the floor.

The cost of making and fastening the blocks to the trucks is small. *W. R. Jenkins, Chattahoochee, Ga.*

LONG-LASTING, EASY-TO-CLEAN STAINLESS STEEL

is P. H. Hanes Knitting Company's choice for extractors and dye tubs



GENERAL SUPERINTENDENT W. W. Cantrell inspects fabric as it comes from one of seven Tolhurst Centrifugal Extractors at the Hanes mill. The Stainless extractors were manufactured by American Machine & Metals, Inc., East Moline, Ill.

PART OF THE BATTERY of 12 Tru-Shade dye tubs at the P. H. Hanes Knitting Company's Winston-Salem mill. The tubs were built from Stainless Steel by Rodney Hunt Machine Company, Orange, Mass.

STAINLESS STEEL handles a lot of jobs in textile processing . . . and handles them well...but its combination of properties seems especially made to order for the conditions that exist in the dye house.

P. H. Hanes Knitting Company's mill at Winston-Salem, N. C., passes along a favorable report on the Stainless Steel equipment in its dyeing and bleaching department. Seven centrifugal extractors, installed in 1941, and 12 dye tubs, installed between 1946 and 1948, owe their performance records to Stainless Steel construction.

General Superintendent W. W. Cantrell says, "The things we like most about Stainless Steel equipment are that Stainless is long lasting, easily cleaned and free from maintenance problems."

The smooth, dense, durable surface of Stainless Steel guards against snagging of threads and fabrics. The ease with which it can be cleaned prevents color carry-over even when going from a dark to a light shade. And there's no chance of rust spots or stains on the fabric from the Stainless equipment.

If you're using Stainless equipment today, you've seen what a difference it can make in processing operations. It will pay you to look further for jobs where you can take advantage of its unique combination of properties. And when you do, ask your equipment fabricator to use perfected, service-tested U·S·S Stainless Steel.

UNITED STATES STEEL CORPORATION, PITTSBURGH • AMERICAN STEEL & WIRE DIVISION, CLEVELAND • COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
NATIONAL TUBE DIVISION, PITTSBURGH • TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. • UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

U·S·S STAINLESS STEEL

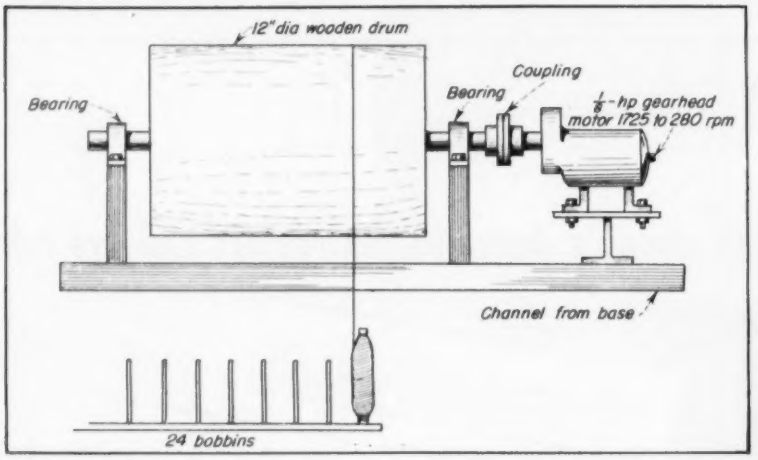
USS

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

3-09

UNITED STATES STEEL

Reel Straightens Out Tangled Yarn



WE USE THIS HOMEMADE APPARATUS to pull off tangled yarn from bobbins that could not be used otherwise. One operator handles the machine and can run 24 bobbins at one time.

Our old method of untangling yarn on bobbins was to wind it off the bobbin on to an empty spindle on a spinning frame. We had a man sit in front of a frame and use up one or two spindles to wind off this tangled work. In addition to the loss of production on these spindles, this method interfered with the spinner and doffer. It was not satisfactory at all.

With the apparatus shown in the sketch, we can untangle two or three times as much yarn. The machine is placed in a convenient corner of the spinning room and is out of the way of other workers. We use it to straighten out tangled work on warp and filling bobbins that could not be used otherwise. As soon as the tangle is wound off the bobbin, we break the yarn and throw that bobbin aside into a basket. It will be put with other yarn of the same count and used there.

To make the apparatus, you need only a stand for your bobbins, a channel-iron base, two bearings, a 12-in. diameter wooden drum, and some method of driving it at a satisfactory speed. We use a gearhead motor with a direct coupling onto the drum shaft and run it at 280 rpm. *W. H. Leathers, Roanoke Rapids, N. C.*

Separate Slubber Bobbins From Front and Back Rows

We had a lot of variation on our fine roving frames until we found that bobbins on the front row of the slubber were different in hank number from bobbins made on the back row.

Now we paint front-row bobbins to distinguish them from back-row bobbins on the slubber. Then we are sure to creel one bobbin of each on the fine frames so that the variation is canceled.

Variation in our fine roving has dropped from 5 and 8% to 1.5%.

Best-Kink Award for March

Each month *TEXTILE WORLD* awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best Kink for March, according to TEXTILE WORLD reader-judges, was:

"Prevent Waste Filling From Stationary Magazines"
By Ernest Shackleton, Spinners Ltd., Huntingdon, P.Q., Canada.

Sectional Truck Keeps Knitting Lots Separate

FIVE SECTIONS, each 9x18 in. and about 3 ft. deep, keep knitting lots separate but still allow a good-sized truck to be used.

A wooden cart with swivel casters is serving many purposes in the finishing department of American Mills, Griffin, Ga. The mill knits many types of underwear fabric in a variety of patterns.

In order to help keep styles moving in the desired sequence through drying and calendering, the mill made a cart with five 9-in. partitions that make it easy to unload any particular style to the dryers.

The cart, constructed of finished 3-in. slats spaced 3 in. apart, is 18 in. wide. The cart is used to transport the fabric from bleaching to the extractor and then to drying. It was inexpensive to construct and has saved a lot of time in handling the fabric.

Slasher Brushes Prevent Warp-Yarn Balling

We have eliminated the cutting and bruising of filling that was caused by a standard mechanical feeler. Here's how we did it.

We made an electro-mechanical magazine in which the transfer latch is tripped by a magnet that is operated by an electric feeler. When the electric feeler makes contact, it causes the magnet to pull the trip plate up under the transfer latch. We get a quicker transfer setting and can run filling as low as 50 den. without any bruising or cutting.

This electro-mechanical feeler can be attached to any silk, rayon, or woolen loom.

PORTAGE HOSIERY COMPANY, WISCONSIN

H. S. Bronson, Supt. at Portage told us:

"YOUR LINE OF GLADE OILS SERVES OUR PLANT COMPLETELY"

OIL STAINS ON FINISHED PRODUCTS are a particular hazard in the hosiery business. Glade Oils, quality lubricants, with high "wash-out" ability, prove perfect answer.

CITIES SERVICE LUBRICATION ENGINEERS offer on-the-job lubrication tests without upsetting tight schedules found throughout the textile industry.

Cities Service Lubrication Engineer Proved How Glade Oils Were Superior in Combating "Staining"!

According to Mr. Bronson, Superintendent at Portage, Cities Service Glade Oils were not the only oils tested by them. As he put it:

"We could not advocate any one brand until we had satisfied ourselves on the merits of several. The 'wash-out' ability of Cities Service Glade Oils clearly demonstrated their advantages.

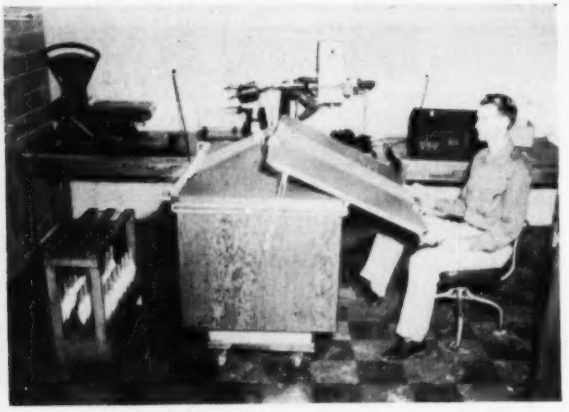
"We were also very definitely impressed with the industrial survey of our textile machinery made by your local engineer. The survey did not impose any radical changes that might have upset our heavy production schedules . . . and the result was the solution (Cities Service Glade Oils) to a serious 'staining' problem we had!"

Perhaps a Cities Service Engineer has an answer that will mean time and money saved for you too. Contact the office nearest you or write Cities Service Oil Company, Dept. E27, Sixty Wall Tower, New York 5, New York.

CITIES SERVICE
QUALITY PETROLEUM PRODUCTS

 For more information, write direct or use Reader Service post card.

GRAY LINOLEUM on the tilted table top is easy on the eyes and shows up defects readily. Defects are mounted on cardboard at left.



DEWEY EASON'S FOOT controls the motor-driven cylinder under this table. The creel holds 30 bobbins.

King-Size Yarn Board Permits Continuous Inspection

Winding of yarn boards is ancient history at Russell Mfg. Co., Alexander City, Ala. A motor-driven system enables one man to inspect yarn from 30 bobbins at once.

The new setup consists of a table with an adjustable top, a creel, and a winding system.

The table, which is about 3 ft. high, 4 ft. long, and 3 ft. wide, is mounted on casters for mobility. The top is adjustable two ways, as shown in the picture, and is covered with slate-gray linoleum. A comb section at the top and bottom of the table top keeps yarns separate and straight.

The creel has three rows of 10 bobbins each and is set on the floor behind the table.

The winding system is a motor-driven cylinder. The aluminum cylinder has a 36-in. circumference and is driven by a 1/3-hp. motor. The cylinder is mounted under the table, and winding is controlled by a foot switch.

When a defect is noted, the operator stops winding and cuts out the defective section, which is then mounted on a piece of cardboard.

Russell likes the new system because it is fast in operation and results and because it allows more yarn to be inspected with ease.

This Device Will Count the Knots in Your Yarn

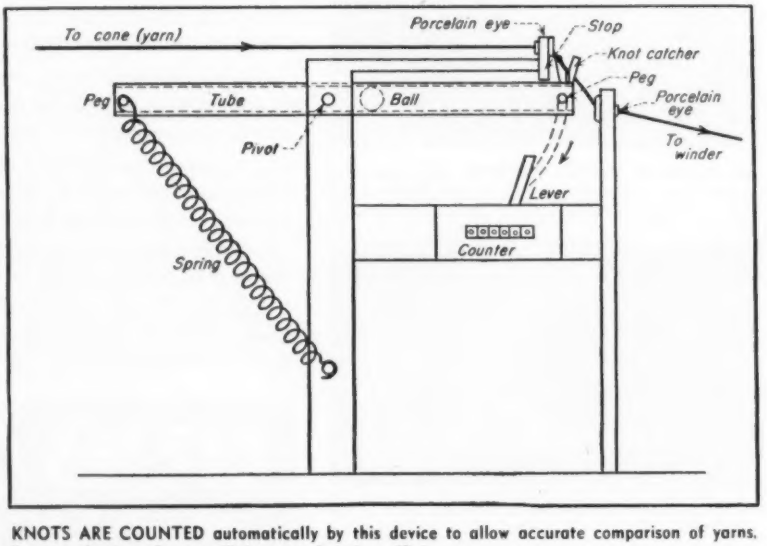
Knots and slubs in knitting and seaming yarns cause endless trouble. The number of knots varies from one yarn manufacturer to another, and yarns showing the least number of knots are usually selected. The problem is to know exactly which yarns are best.

Here is a mechanical method of counting knots. A tube is balanced on an upright post fixed to a platform. Pegs are fitted horizontally through both ends of the tube, and a spring connects the left-hand peg to the upright.

The tube is kept stationary by a bracket fitted to the top of the upright. Fixed to the tube at the right end is an adjustable knot catcher, and inside the tube on the same side is a steel ball.

Yarn is run from a cone through a porcelain eye fixed to the tube stop, over the knot catcher, and through another porcelain eye. The yarn is wound onto any slow mechanical reeling device.

When a knot catches in the knot catcher, the tube is tripped down and the metal ball rolls down the tube and overcomes the holding force of the spring. The knot-catcher end of the tube falls and strikes the lever of a counter fitted to the upright. The lever helps the tube to spring back to its original position. The yarn drops back into the V-shaped slot as the tube returns to its original position, and the system is then ready for the next knot. *H. J. Haas, Martinsburg, W. Va.*



KNOTS ARE COUNTED automatically by this device to allow accurate comparison of yarns. Proper selection of yarn will increase knitting efficiency.

Rayon Reports

Study reconfirms launderability of rayon shirts of vat-dyed fabrics stabilized with Avcoset

Twenty consecutive launderings of white, cream, and yellow spun rayon shirts that had been treated with the Avcoset process, have clearly proved their commercial launderability.

This was the finding of a study conducted on 36 shirts at the College of Household Arts and Sciences, Texas State College for Women. The study was made under a Textile Research Fellowship sponsored by American Viscose Corporation.

The strength, dimensional change, and color retention values of the shirts were measured after 5, 10, 15, and 20 launderings.

Dry strength changes in the warp direction ranged from 7.5 to 26.2 per cent after 20 washings. In the filling direction changes ranged from 6.8 to 22.7 per cent. No rupturing nor visible damage occurred during the washings.

Dimensional changes, by Commercial Standard CS59-44, showed no positive or negative change greater than 1 per cent. Higher shrinkages noted in the seams were attributed to the thread used and the amount of tension applied during commercial laundry pressing procedure.

After the washings, plus ironings, the number of units of color difference in the cream shirts was 5.87, and in the yellow shirts, 3.50. Whiteness retention was 100 per cent throughout.

Inquiries about the Avcoset process for stabilizing rayon shirting and other fabrics are cordially invited. Complete technical assistance in its application is available from American Viscose textile technicians.

RAYON 20 YEARS AGO

NEW YORK, May, 1933—Makers of rayon blouses and dresses have created a "fifth season" — a late showing on summer apparel.

PHILADELPHIA, May, 1933 — Rayon is claiming a big share of the spotlights at the 29th Annual Knitting Arts Exhibition.

PARIS, May, 1933 — "Peau du Diable" (Devil's Skin) is the name of a new wrinkle-finished rayon novelty material popular here.

MAKE USE OF *Avisco*® 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

AMERICAN VISCOSE CORPORATION

America's first producer of man-made fibers

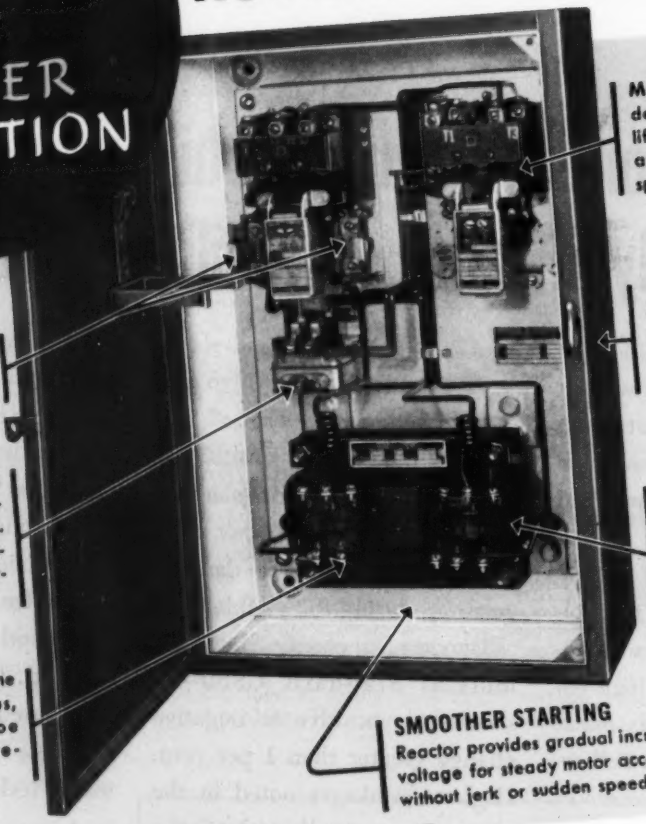
RAYON ACETATE VINYON* FILATEX®

Sales Offices: 350 Fifth Avenue, New York 1, N. Y.; Charlotte, N. C.; Cleveland, Ohio; Philadelphia, Pa.; Providence, R. I.

*TMC & CCC

New REACTOR TYPE ROVING FRAME STARTER

FOR SMOOTHER STARTING AND COOLER OPERATION



Magnetic contactors are designed and built for long life and heavy usage. Note accessibility for easy inspection and maintenance.

A choice of enclosures to meet varying textile mill applications. Nema IA illustrated. Nema I, V, and XII also available.

Melting alloy overload relays for maximum accuracy and dependability.

Adjustable pneumatic timing relay controls duration of starting period. Easily set for proper acceleration . . . makes all starting periods identical.

Reactor taps provide nine different settings. Thus, starting torque can be matched to machine requirements.

NO FIRE HAZARD
Reactor design allows no more than 65° C. rise and permits non-ventilated enclosure. Reactor will not overheat on any duty cycle.

SMOOTHER STARTING
Reactor provides gradual increase of voltage for steady motor acceleration without jerk or sudden speed change.

• Roving frames call for smooth, "soft" starts and the motor control must operate without fire hazard in linty atmospheres. This new reactor type, reduced voltage starter has been designed to meet these textile mill requirements—specifically.

Bulletin 8548 gives the complete story. Write Square D Company, 4041 North Richards St., Milwaukee 12, Wisconsin, or contact your nearby Square D field engineer.

SHIPPER ROD CONTROL STATION
An ideal "running mate" for the new reactor type starter. Flexible design permits conversion to either l.h. or r.h. operation clockwise or counter clockwise rotation. Slotted operating arm for easy adjustment. Snap-action contact mechanism.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

1903 • 50 YEARS OF DESIGN LEADERSHIP • 1953

Free Technical Information

Reader Service

MILL EXECUTIVES may obtain free for the asking . . .

. . . OUTSTANDING TRADE LITERATURE reviewed on the next and following pages

. . . FURTHER INFORMATION on
New Textile Equipment
New Dyes & Chemicals
New Useful Accessories
Editorial Articles
and the Advertisements

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. . . to get more information on anything published in the editorial or advertising pages of this issue. If your inquiry concerns equipment or supplies, name the specific equipment or supplies involved. If your inquiry concerns anything other than equipment or supplies, you must state specifically the information you want.

. . . to send a Kink, a letter for Round Table, or a news note.

. . . to comment on anything appearing in this issue.

. . . to query the editors about any manuscripts you might wish to submit to them.

. . . to send an inquiry to the Questions & Answers department.

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Cards require no postage . . . but be sure to give your name, title, mill connection, and address.

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. . . to request copies of trade literature described on the next and following pages or to get more information on New Textile Equipment, New Dyes & Chemicals, and New Useful Accessories described in this issue.

Dear Editor: This Card Expires July 31, 1953

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. MAY, 1953

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TEXTILE EQUIPMENT NEWS Number: T-1 T-2 T-3 T-4 T-5 T-6 T-7 T-8 T-9 T-10 T-11 T-12 T13 T-14 T-15 T-16 T-17 T-18 T-19 T-20 T-21 T-22 T-23 T-24 T-25 T-26 T-27 T-28 T-29 T-30 T-31 T-32 T-33 T-34 T-35 T-36 T-37 T-38 T-39 T-40

USEFUL ACCESSORIES Number: U-1 U-2 U-3 U-4 U-5 U-6 U-7 U-8 U-9 U-10 U-11 U-12 U-13 U-14 U-15 U-16 U-17 U-18 U-19 U-20 U-21 U-22 U-23 U-24 U-25 U-26 U-27 U-28 U-29 U-30

DYES AND CHEMICALS Number: D-1 D-2 D-3 D-4 D-5 D-6 D-7 D-8 D-9 D-10 D-11 D-12 D-13 D-14 D-15

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. MAY, 1953

Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for May are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY

Warp sizers are described in a bulletin made available by Charles B. Johnson Machine Works. Pictures of the sizer with arrows point out the finger-tip tension control, vapor-tension thermometer, super-pressure quetsch, lever-controlled friction disks and 24 other features. (F-1)

A nylon crimp setter is described in a bulletin from Turbo Machine Co. Production is 200 to 250 lb. of staple per hr. Processing time is close to 20 min. One carrier is loaded while another carrier is in the machine, and each lot of staple or tow is processed the same length of time. Steam pressure of 115 psi. is required. (F-2)

A crimper for nylon and other synthetic fibers is the subject of another bulletin from Turbo Machine Co. Production is 350 ft. per min. The pressure wheel has graduations of 0 to 1,800 lb. and a spring wheel compensates for normal tow variations. Crimping wheels come in sizes of ⅝, 1, and 1¼ in. Floor space is 18x20 ft. (F-3)

An argyle knitting machine is described in a brochure prepared by Hemphill Co. The solid-color Banner machine knits cotton, wool, spun nylon, or blended yarns; it has a wide range of patterns, five colors to a course, and a smooth outside as well as inside. (F-4)

A transfer rib-top knitting machine is the subject of another brochure prepared by Hemphill Co. The Banner machine has a high output and eliminates transfer training and equipment. A picture shows anklets in sizes from 4½ to 10 that were knitted on machines of the same diameter. (F-5)

A 32-section, 66-gauge full-fashioned knitting machine is featured in a brochure put out by Karl Lieberknecht, Inc. The machine has a weft wire laying-in device, a micro adjustment of needlebars, spring-mounted slur cams, an automatic weight take-off, four narrowing spindles at quarter points, and a new-type shock absorber. (F-6)

An automatic tacker is described in a bulletin from Bachmann Uxbridge Worsted Corp. The machine tacks fabrics of any weight and up to 94 in. wide at a minimum speed of 35 yd. per min. The complete unit or just the selvage aligner can be furnished. Right- and left-hand controls allow one operator to work two tackers. (F-7)

Adjustable bow expanders are described in a bulletin from Mount Hope Machinery Co. Two types of expanders are described: a bow that is adjustable from 0 to the equivalent of 5 ft. in 50 ft. of face (4½- and 6-in. o.d., 1⅛-in. axle, lengths to 54 in.), and a bow that is adjustable in the center only (6¼-in. o.d., 3-in. axle). (F-8)

Stainless-steel tanks are the subject of a bulletin put out by Rodney Hunt Machine Co. The company fabricates equipment of all sizes, and a data sheet for requesting quotations is included. (F-9)

AUXILIARY EQUIPMENT

Multi-unit control centers are discussed in a bulletin put out by Allen-Bradley Co. The centers provide centralized control of a multimotored machine or a large group of machines. Layouts and floor arrangements are given, and a "How to Order" section is included. (F-10)

pH, Redox and conductivity recorders and controllers are described in a bulletin from Minneapolis-Honeywell Regulator Co., Brown Instruments Div. The bulletin explains the theory of electrochemical measurement and gives the benefits from using this equipment to control desizing, dyeing, process water, rayon-fixing baths, wool scouring, and stream pollution. (F-11)

A mechanical cotton-fiber blender that was developed by the USDA is described in a bulletin from Thwing-Albert Instrument Co. The blender prepares cotton samples for all the conventional fiber tests. An operator can blend eight 10-gm. samples per hr. (F-12)

A demineralizer is described in a bulletin from Penfield Mfg. Co., Inc. The equipment is fully automatic and operates on the mono-column method. Regeneration time is less than 2 hr., and nominal flow rate is 1,000 gal. per hr. (F-13)

Infrared radiant-heating panels are described in a bulletin from Syntron Co. These panels heat by direct radiation and no reflectors are necessary. The panels have mounting flanges so they can be set up to form ovens, dryers, or heaters. (F-14)

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Reader Service (Continued)

A high-speed integrator is the subject of a bulletin from Instron Engineering Corp. The instrument is based on standard computer techniques. Textile uses are for moisture determinations (in conjunction with a moisture detector), fading tests, and analysis of graphical data. **(F-15)**

Self-operating temperature regulators for steam, liquors, and gases are described in a bulletin from Farris Stacon Corp. The regulators are direct acting for heaters, tanks, and dryers, and indirect acting for cooling and circulating systems. **(F-16)**

The Baldwin-Dunlop Statigun for measuring electrostatic charges is the subject of a bulletin from Herman H. Sticht Co., Inc. The instrument discriminates between fixed positive and negative potentials and alternating potentials. It weighs only 3½ lb. **(F-17)**

Direct-writing recorders are discussed in a bulletin put out by Sanborn Co. The instruments use a heated stylus ribbon rather than a capillary pen to prevent clogging. The instruments offer a wide choice of speeds and up to four channels. **(F-18)**

An automatic control, for process varibles such as temperature and pressure, that controls the variable for a preset period of time is described in a bulletin from The Foxboro Co. The instrument controls rise and hold times on a 340° scale. **(F-19)**

Six-inch dial indicators for temperature, pressure, and load applications are described in a bulletin put out by Taylor Instrument Cos. Sensitive elements, scales, and mounting dimensions are included. **(F-20)**

Test-Glo, a tester of electrical circuits, motors, and fuses, and Flur-Test, a tester of fluorescent fixtures, are described in a bulletin prepared by Ideal Industries, Inc. The circuit tester tests up to 600 v., and the fixture tester indicates whether the trouble is in the starter, tube, or circuit. **(F-21)**

SUPPLIES AND CHEMICALS

Have an odor problem? Deodorizers for finishing solutions and rinsing baths are presented in a bulletin put out by Sindar Corp. Also included are germicides, fungicides, stabilizers, and antioxidants. **(F-22)**

Rubberized abrasives, wheels, points, blocks, sticks, and cones—for burring, smoothing, polishing, cleaning, and trimming—are described in a bulletin prepared by Cratex Mfg. Co. The abrasives are said to give results on all metals, and operating suggestions are given. **(F-23)**

Twitchell oils for finishing Sanforized fabrics are the feature of a booklet from Emery Industries, Inc. The finishing of regular and absorbent fabrics and warp slashing are also discussed. A selection guide for Twitchell oils is included. **(F-24)**

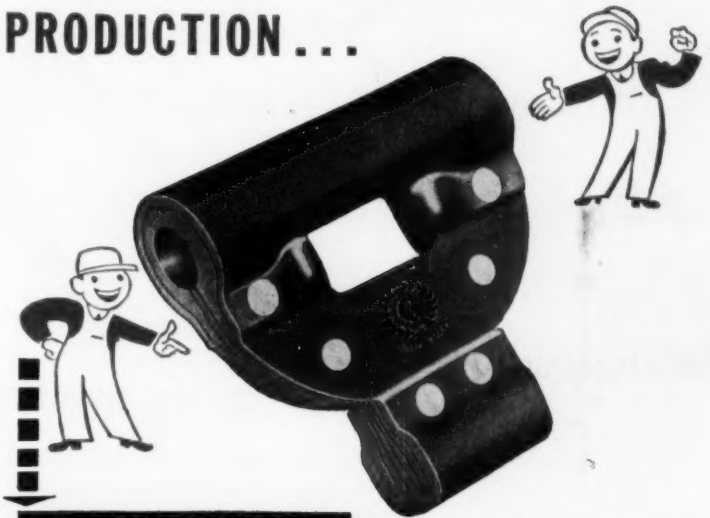
Aerotex fire retardants are described in a bulletin prepared by American Cyanamid Co. The bulletin explains the application of the fire-retardant finishes. **(F-25)**

Caustic soda is the subject of a booklet from Wyandotte Chemicals Corp. Anything you want to know about caustic soda is included in this booket—manufacture, shipping, pricing, handling, storage, and uses. **(F-26)**

Latex-backing compounds for pile fabrics, rugs, and flat goods are described in a bulletin prepared by Montgomery Bros., Inc. The compounds are described with recommended curing cycles and general information. **(F-27)**

Steel shelving is the feature of a catalog prepared by Precision Equipment Co. Other maintenance and storage equipment such as ladders, filing cases, lockers, trucks, boxes, and cabinets are included. **(F-28)**

DECREASED REPLACEMENT TIME means - INCREASED PRODUCTION . . .



5 SOLID REASONS show why today's high speed looms require less time for picker replacement when equipped with longer wearing Garland Rawhide Loom Pickers.

1. **REINFORCED STICK-HOLE** Molded rawhide reinforcements at the stick-hole cut down stick-hole wear in the new Garland picker. Result: *Longer picker life.*

2. **IMPROVED SPINDLE HOLE** The spindle hole is perfectly rounded, excavated, and strengthened by locked-in flanges at both ends. Result: *No reaming, no binding, stays round.*

3. **MOLDED FOR UNIFORMITY** The new Garland rawhide pickers are individually pressure molded to uniform dimensions. Result: *The elimination of filing and fitting.*

4. **STRENGTHENED PICKER HEAD** The stronger, heavier outside layer of rawhide eliminates the need for a rivet through the picker head. Result: *Perfect throw through a longer picker life.*

5. **FINEST MATERIAL KNOWN** Our long experience has taught us that only Water Buffalo Hides possess the strength and elasticity that are so necessary in building a picker to meet today's high speed requirements. They are *tough enough to stand up* under terrific punishment, yet will yield just enough to be kind to your shuttles, your sticks, and your looms.

Garland *Manufacturers of Rawhide Loom Pickers for over 80 years*

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SACO, MAINE

Controlled Pressure

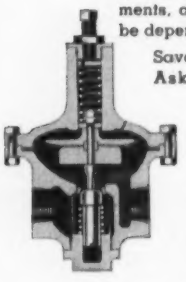
for efficient operation

Clark Pressure Reducing and Regulating Valves

are precision-made for positive pressure control on air, gas or steam lines.

Where different types of equipment, with varying pressure requirements, are operated from a common line, Clark Regulating Valves can be depended on to deliver automatically the "just right" pressure to each.

Save on fuel, maintenance and protect expensive equipment. Ask your Clark representative to specify the right Clark valves for your needs . . . or write us direct.

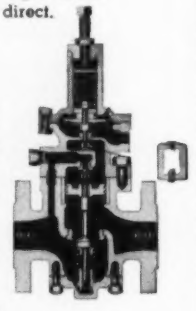


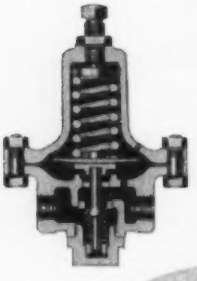
TYPE KRV

Pressure Reducing Valve. Diaphragm Operated-Single Seated Valve. Sizes ½" to 1½" for initial pressures up to 250 P.S.I. Reduced pressures to 85 P.S.I.

TYPE CRV

Pressure Reducing Valve. Integral pilot controlled, piston operated. For pressure control from "dead end" to full capacity. Sizes ½" to 6".





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Pressure Reducing Valve. ⅜" and ½" Single Seated, Spring Loaded, Diaphragm Actuated. For initial pressures to 250 P.S.I. Reduced pressures to 200 P.S.I.

QUICK-CLEANING STRAINERS

Remove dirt, scale and grit from steam, fluid and gas lines. Sizes ½" to 3" I.P.S. For pressures to 250 P.S.I.

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Clark

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Reader Service (Continued)

Woven wire cloth is one of the uses of the alloy-metal wire described in a bulletin from Alloy Metal Wire Co. The facilities of the company are also described in the bulletin. **(F-29)**

Surface-active agents are described in a bulletin prepared by E. F. Houghton & Co. Seven detergents and three wetting agents are listed with classifications, properties, and uses. **(F-30)**

Treaded leather belting is the subject of a booklet prepared by E. F. Houghton & Co. The advantages and properties of the belting are given, and engineering information on how to make endless pulleys and how to repair a belt is included. **(F-31)**

ENGINEERING AND MAINTENANCE

"Compressed Air Power in Industrial Production" is the title of a booklet prepared by the Committee on Engineering Education of the Compressed Air and Gas Institute. This booklet is the third in a series. It discusses pneumatic tools and other aids to industry. **(F-32)**

"Coupling or Converter?" is the title of a bulletin put out by Twin Disc Clutch Co. The bulletin explains where couplings or torque converters should be used and why; the hydraulic coupling transmits torque, the converter multiplies torque. **(F-33)**

"What You Should Know About Diesel Engines" is the subject of a booklet prepared by Harnischfeger Corp. The booklet explains the advantages and operation of diesel engines, including the engines made by this company. **(F-34)**

Steam traps for power plants, distribution systems, and processes are discussed in a bulletin prepared by Yarnall-Waring Co. Besides information on the traps—sizes, capacities, applications, and specifications—the bulletin gives properties of saturated steam, condensate return lines, and operating instructions. **(F-35)**

Fork trucks, tractors, and trailers are described in a bulletin made available by Mercury Mfg. Co. Specifications of the various models are given, and descriptions of accessories are included. **(F-36)**

A heavy-duty electric tractor is described in a bulletin put out by The Yale & Towne Mfg. Co. The tractor has a maximum capacity of 700 lb. and travels with a full load at 2 mph. The tractor turns around in a 58¼-in. aisle and makes a right-angle turn in a 43½-in. aisle. **(F-37)**

Air-operated pumps and feed systems are described in a bulletin from Milton Roy Co. Construction, operation, applications, air-consumption, and capacity-pressure tables are given for pumps that handle 0.4 to 405 gal. per hr. and have discharge pressures to 21,000 psi. **(F-38)**

Miniature ball bearings are described in a bulletin prepared by Miniature Precision Bearings, Inc. Some of the bearings are used for thread guides and textile rollers. **(F-39)**

A forced-recirculation steam generator is described in a bulletin put out by Clayton Mfg. Co. The units come in 10 to 100 hp., and can be installed separately or in tandem. Units in tandem can be centralized or installed at different points in a plant. **(F-40)**

A piston diaphragm pump for controlled-volume pumping of fluids is described in a bulletin prepared by Lapp Insulator Co., Inc. Textile uses of the pumps are control of peroxide bleaching, pH of rayon wash water, slurry, dye mixtures, and dilution of caustics and sulfuric acid. **(F-41)**

Pipe tools are described in a bulletin put out by Beaver Pipe Tools. Threaders, cutters, vises, and portable pipe-tool power drives are described. A helpful section on how to locate and

BRINTON

MODEL MERCEDES

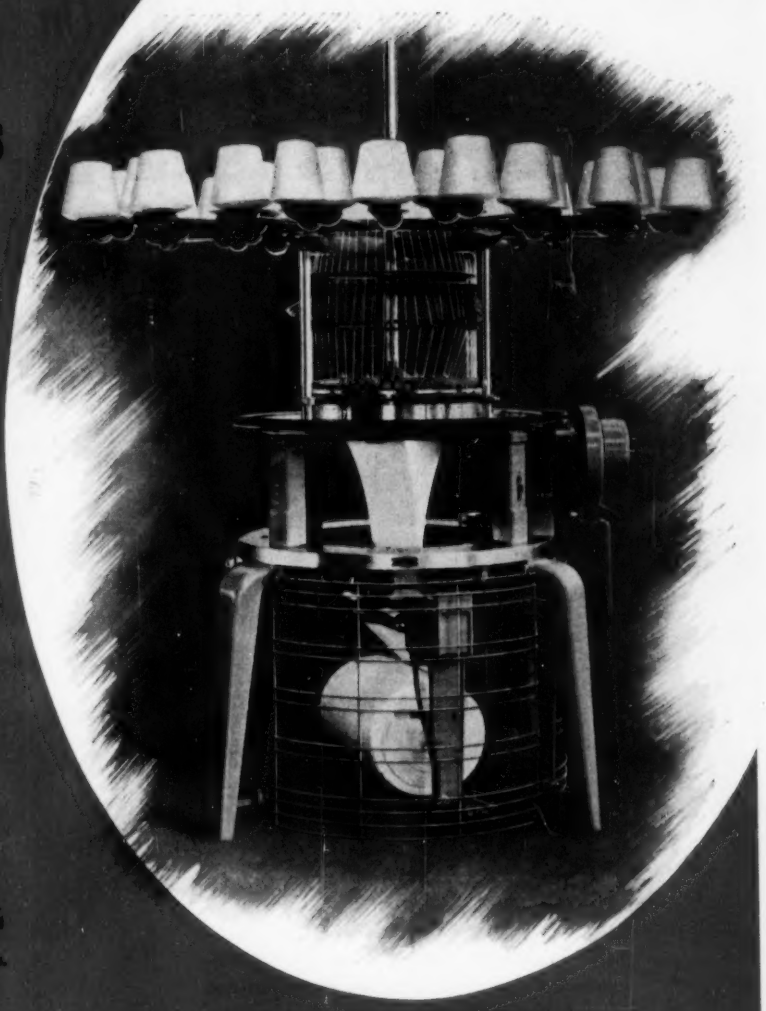
STYLE RMS

Knitting Machine of the Mid-Century

BRINTON'S NEW DESIGN FOR BETTER PRODUCTION

Engineered features of Model Mercedes are:

- *Stationary Bobbin Table* provides continuous production by use of tie-in yarns.
- *Positive Electric Magnetic Clutch and Brake* work in conjunction with individual motor drive, permit streamlined construction that provides ultra-efficient operation and pleasant eye appeal. Magnetic Clutch and Brake involve self-contained panel for current conversion. Practically instantaneous function of all stop-motion facilities.
- *Horizontal Hand Wheel.* Functions with amazing ease. Saves time and space. Allows operator to move cylinder and dial needle by needle without effort.
- *Two Jog Control Buttons,* on opposite sides of machine, permit operator to move cylinder and dial as little as 1 needle at a time.
- *Super Duplex Construction* assures elimination of fabric lines.
- *Colorful Appearance,* a scientific blend of bright gray and rich red, provides greater safety and efficiency and reduces fatigue.
- *Striping Obtained* by predetermined arrangement of cones of yarn on bobbin table.
- *Wide Variety of Articles,* Model Mercedes produces fine balbriggan or plain jersey fabric for undergarments — basque, polo or T-shirts with colored yarns or bleached finish.
- *More Even Stitch and Smoother Fabric* because each stitch cam has cushion cam at the bottom. Individual rising cams for each feed.
- *Great Saving of Floor Space.*
- *Production* is an outstanding 75 to 80 yards-per-hour on all diameters.
- *Model Mercedes* is available in diameters from 10" to 26", 28 to 64 feeds.



In this, the Machine of the Mid-Century, the most advanced engineering techniques are combined with the ideas of the modern industrial designer. Here is a completely new conception of the large diameter knitting machine.

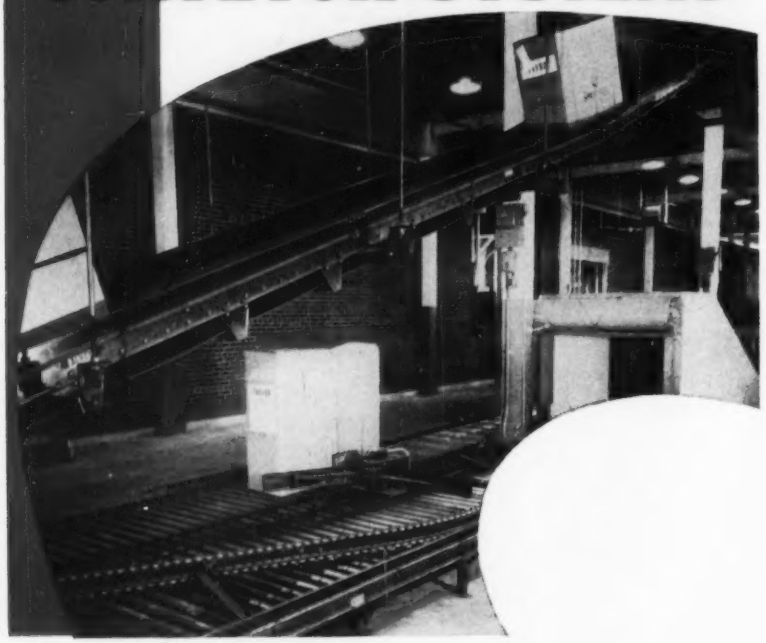
Brinton research, craftsmanship and six decades of know-how worked to produce a machine that gives higher production and better quality at lower cost. Model Mercedes is an engineering achievement, a machine with more features, greater advantages and mechanical advancements.

BRINTON

CIRCULAR KNITTING MACHINES

KENSINGTON AVE. & M ST., PHILA. 24, PA., U. S. A.

Want to Keep Up to Date On ALVEY CONVEYOR SYSTEMS



If you are the man who has the responsibility for solving materials handling problems in your company, you should be informed about Alvey Package Conveyor Systems. You are sure to benefit from the broad knowledge and wide range of experience of Alvey engineers.

If you have a problem right now, we'll be glad to work with your technical staff toward developing the best solution. If you want material for future reference, write today, giving us your name and title. We'll be glad to send you information — from time to time — no obligation, of course.

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Everytime YOU Man HANDLE A PACKAGE YOU ADD TO THE COST OF YOUR PRODUCT

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Reader Service (Continued)

correct pipe machine troubles is included. **(F-42)**

Switchgear is the subject of a bulletin prepared by Westinghouse Electric Corp. Current and interrupting ratings are given, and data on inspection, disconnection, and replacement are included. **(F-43)**

Automatic combustion controls for oil- and gas-fired boilers are the subject of a bulletin prepared by Bailey Meter Co. Typical instalations are shown, and the component parts of the control systems are illustrated. **(F-44)**

An overload release for the Dodge torque-arm speed reducer is the feature of a bulletin put out by Dodge Mfg. Corp. The overload release loosens the belts, cuts off the power, and gives a warning. A price list is included. **(F-45)**

GENERAL

The engineering services offered by Charles T. Main, Inc., are described in a booklet made available by that company. The services include investigations and reports covering plant sites, modernization and reorganization programs, complete plans and specifications for textile mills, equipment purchasing, valuations of property, and expert testimony. The organization is described, and sample projects are presented. **(F-46)**

Mechanized accounts-receivable posting is the subject of a bulletin prepared by Remington Rand Inc. The double-entry distribution is done on a mechanized accounting machine that is said to save 40 to 60% in clerical time. **(F-47)**

"Happy Father's Day" is just one of the special holiday bands to dress up product sales packages. The printed cellophane bands are made by Shellmar Products Corp., and samples are presented in a folder made available by that company. **(F-48)**

Motor-truck scales are described in a bulletin from The Howe Scale Co. If you need to weigh your truck and trailer loads before they hit a highway weighing station, here is your information. **(F-49)**

The yarn and yarn-dyeing service of Franklin Process is presented in a bulletin prepared by that company. The bulletin shows the inside of several of the plants and describes the services offered. **(F-50)**

Small-Plant Maintenance

(*Continued from page 120*)

Backlogs of jobs are held in reserve to fill just such production lulls.

However, there are several disadvantages to this system. Larger projects are often delayed or prolonged because production requirements prevent their completion without interruption. Another disadvantage is that when production work is greatest and maintenance needs are correspondingly great, production workers are not available for maintenance work.

Hire Skilled Workers

The major difficulties in providing a good maintenance force for a small plant are hiring trained workers and training these men to fit specific requirements. The most satisfactory method of developing a good labor

...with TYCOL lubricants on hand!

Cleaner because they cling! Tycol Amortac oils are tailored for mill operations with a special additive to impart positive "non-drip" characteristics. They'll lubricate looms, also top rolls on spinning, drawing and roving frames... with no "throw off", no staining of finished threads! The Amortac series is just tacky enough to penetrate and cling to bearings – without splash – at peak roll speeds. With an added bonus: they'll minimize corrosion even in the most humid atmosphere! Request full information from your local Tide Water Associated office – today!

TYCOL
INDUSTRIAL LUBRICANTS

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Over 300 Tycol industrial lubricants are at your disposal... engineered to fit the job!

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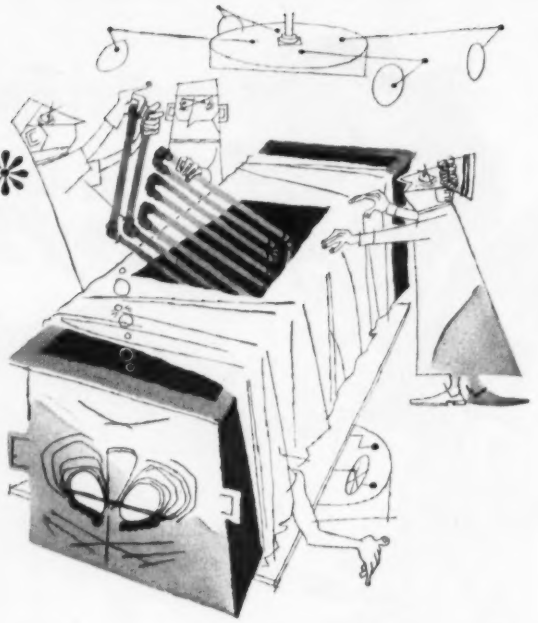
has
coil-itis ✻
got you
constantly
doctoring
your
tanks?



Like the human appendix, pipe coils often give constant trouble until they are removed and replaced with Platecoils. Immediately, you will notice the difference as Platecoils put new life and profits into your heat transfer processes. They heat or cool 50% faster. They take 50% less space in the tank leaving room for greater payload. Platecoils overcome the limitations and operating difficulties of old fashioned and outmoded pipe coils to save hours of downtime.

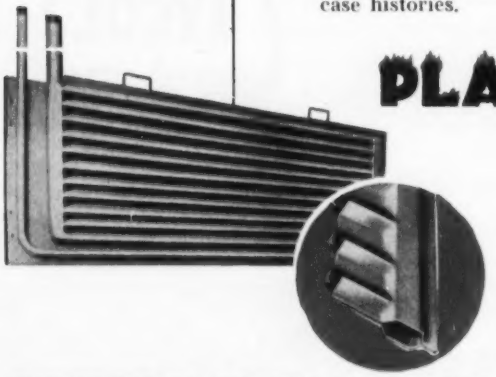
It costs less to cure coil-itis with Platecoils than to suffer its evils.

Write for Bulletin P32 today!

PLATECOILS SAVE 50% IN HEAT TRANSFER COSTS

PLATECOILS REQUIRE 90% LESS CLEANING

At Motor Wheel Corporation cleaning time has been cut from 10 hours per pipe coil every 60 days to only one hour per Platecoil. Ask about other case histories.



PLATECOIL

REPLACES PIPE COILS

✻

Coil-itis — Diagnosed as tank heating and cooling problems. Platecoils — the prescription for solving pipe coil problems.

PLATECOIL DIVISION, KOLD-HOLD MANUFACTURING CO., LANSING 4, MICHIGAN

force is to hire highly skilled workers if they can be found.

Another potential source of good maintenance workers is the plant itself. Production workers should be watched for a period before a maintenance man is needed so that a man who possesses intelligence, ingenuity, and adaptability can be selected.

There's just one drawback here: the production superintendent will usually object to the loss of his better men.

Train Your Own Men

If experienced men cannot be hired suitable untrained men must be hired and trained to suit special requirements. Normally, formal training classes cannot be used because of the small number of men involved but several other methods of training are available.

The oldest and simplest method is to assign a new man as a helper to an experienced worker. However, you must be certain that the teacher is doing his work by the most efficient methods and that he is capable of doing a satisfactory teaching job.

A particularly effective method is to assign a new man to a job that appears to be complicated. The supervisor keeps in close contact with the worker and provides instructions for one step at a time and explains the reasoning behind each step in addition to the end results expected.

When the job is completed, the worker is frequently surprised at the ease with which he has finished the job.

A few of these lessons, although time consuming, will pay off because they demonstrate to the worker the value of analytical thinking and systematic organization of his work. This method also permits the supervisor to determine a worker's ability, to become better acquainted with him, and to promote friendlier relations within the department.

There's one important thing about this method. The supervisor must be sure that he knows how to do the job himself before he attempts to train a worker to do it.

Use Outside Contractors

Even the best-staffed maintenance department will be unable to do certain jobs at all or to do them as cheaply as they can be done by outside contractors. Small plants are commonly dependent on contractors for major electrical, heating-plant, and building repairs, large painting projects, masonry work, and motor rebuilding.

In choosing these contractors, the primary considerations are dependa-

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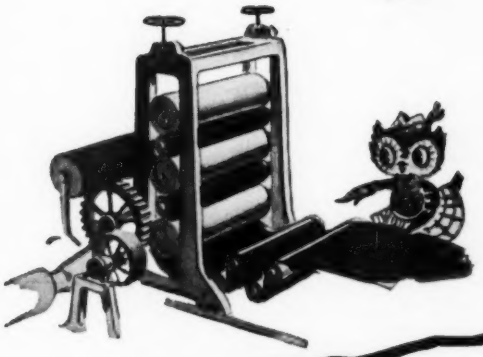
All these

AT NEW LOW COST...

Stabilization

Crush Resistance



Glazing and Embossing—

with RHONITE R-2

To give you the greater economy and improved efficiency of RHONITE R-2 we have not sacrificed these other familiar RHONITE advantages—(1) storage stability; (2) easy handling; (3) excellent durability.

P. S. *It's a good finish for nylons, too.*

RHONITE *is a trademark Reg. U.S. Pat. Off. and in principal foreign countries.*

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MOBILIFT "Stand-Ups" Stand Out!

MOBILIFT *Stand-Up* type Fork Lift Trucks *Stand Out* for efficient, low-cost materials handling in warehouses, terminals and plants because they get more work done faster.

Here's Why:

1. The operator gets on and off an ample size platform in a second or two. He works on his feet, has maximum all-around visibility.
2. MOBILIFTS are agile. Compact design, short over-all length, and MOBILIFT 360° steering mechanism makes ZERO inner turning radius and 57" outer turning radius possible (2,000 lb. model "E"). MOBILIFTS are long-time favorites for close, congested working areas.
3. LEV-R-MATIC push-pull controls speed all movements. NO GEARS TO SHIFT... push-pull levers for forward-back movement, elevating and tilting.
4. MOBILIFT air-cooled 3-cylinder engine delivers abundant, reliable power. Compact, precision-balanced, accessible for economical operation with minimum repair and service.

Let a MOBILIFT Sales Engineer show you why MOBILIFT *Stand-Ups* in your business will *Stand Out!* Write or wire MOBILIFT for complete information today. *No obligation,*

MOBILIFT Lev-R-Matic DRIVE

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bility, fair price, and the location of the contractor. The number of contractors you do business with should be limited to a few dependable companies that know, or will learn, your plant and your policies so that they can provide better and more efficient service.

Set Up an Organization

The elements needed for a top-notch maintenance department are:

1. A good labor force
2. Satisfactory contracting services
3. The ability to arrive at the correct solutions to your problems

Along with these three physical essentials of a good maintenance department, it is necessary to have a system of controls and an organization to operate the controls.

The organization of the maintenance department of a small plant is a simple matter. The maintenance supervisor should report directly to the plant engineer or general manager, regardless of the plant size. Reports of work finished and discussions of work to be done are usually confined to the supervisor and the engineer or plant manager.

Most control records deal with the scheduling of work and the distribution of labor costs. The records should be simple, because complicated and excessive records cannot be kept correctly.

There are many systems that can be used, but so much depends upon the size of the plant and the nature of the work that it's impossible to supply a single system that can be used in all plants.

Try This Simple System

As an example of simplicity, this system is good:

Small pads called "maintenance memos" are given to all foremen and department heads. When maintenance work is needed in any department, the foreman fills out one of the forms and sends it to the maintenance department. In an emergency, the order is telephoned in.

These forms are processed, and a job ticket is made out and posted on a rack where the maintenance workers read the orders and do the work assigned to them. At the end of each day, workers report the time spent on each job to the timekeeper, who enters the information on the back of the job order.

The tickets are analyzed at the end of each month, when the job number and time is entered on a master sheet under various headings. A yearly summary sheet gives a complete breakdown of labor costs for each machine, building, and service.

No carbon copies are used with this

"Want to know why I always go to SOLVAY *FIRST* for these Textile Chemicals?...

REG. U. S. PAT. OFF.

. . . In a word—the answer is *service!* I mean sales service, delivery service, technical service.

Take delivery as an example. When I order textile processing chemicals from Solvay, I know I can depend on Solvay's efficient delivery service—from three convenient plants and over 200 stock points.

Occasionally, I run into a technical problem. Now here's where Solvay really shines, with an *exclusive textile* Technical Service that gives me the services of textile specialists—men who are experts in the textile business.

Yes, I have good reason for going to *Solvay first* for these textile processing chemicals."

SOLVAY PROCESS DIVISION
Allied Chemical & Dye Corporation
61 Broadway, New York 6, N. Y.

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POTASSIUM CARBONATE

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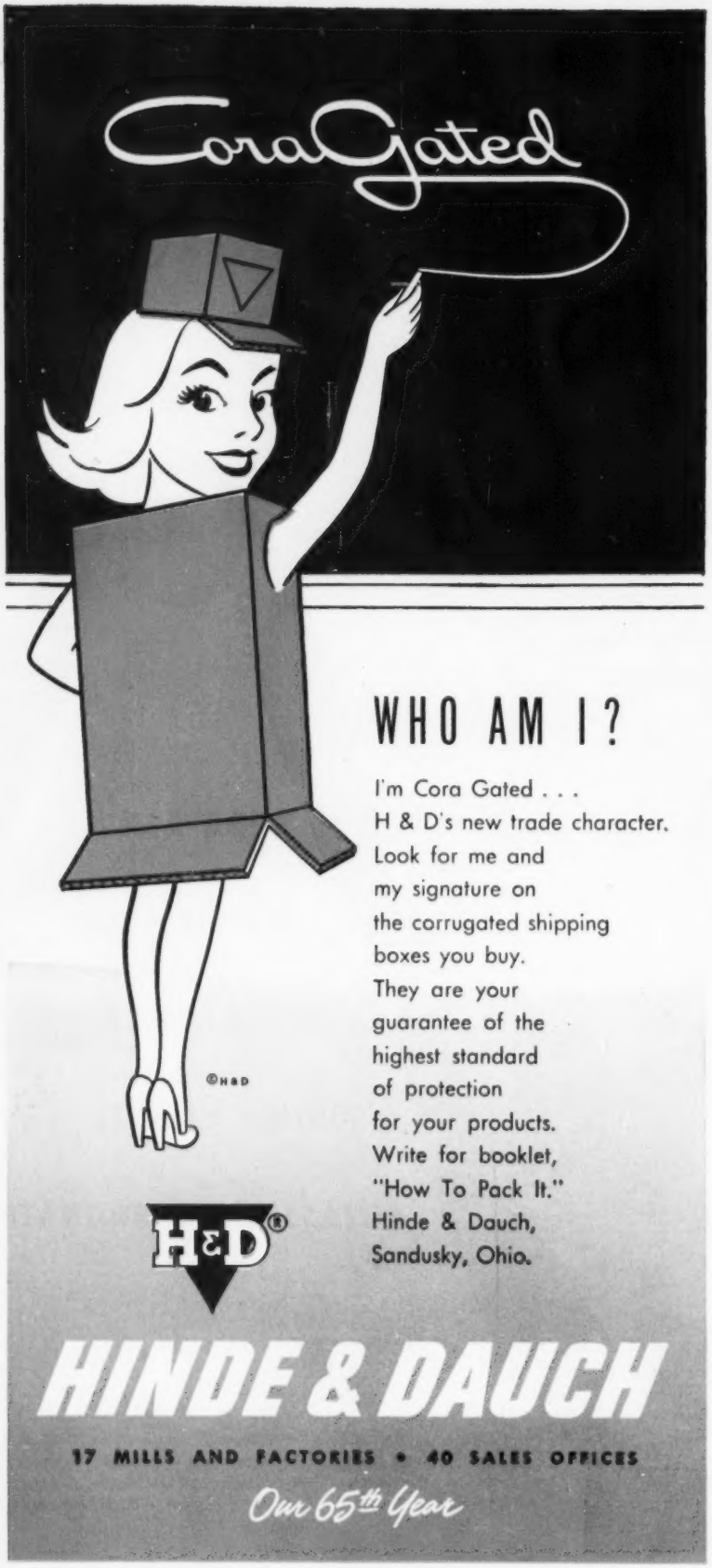
Soda Ash • Caustic Soda • Potassium Carbonate • Calcium Chloride
Chlorine • Caustic Potash • Sodium Nitrite • Ammonium Bicarbonate
Cleaning Compounds • Sodium Bicarbonate • Snowflake® Crystals
Para-dichlorobenzene • Ortho-dichlorobenzene • Monochlorobenzene
Ammonium Chloride



system. A department of 1 to 15 men can be adequately served without carbon copies, and a department of 40 to 50 men can be served if carbon copies are used with a few other changes.

Make the System Work

Several factors can ruin the best maintenance-control system. Since everyone in a small plant soon gets to know everybody else, an air of friendliness and big-family cooperation often prevails. Such a condition is fine, but don't let it lead to informality in your maintenance system.

People are inherently prone to avoid system, and it's easy for a foreman or worker to stop a passing maintenance mechanic and ask him to spend just a few minutes to adjust or fix some machine part. As a friendly gesture, the mechanic consents. This practice may make friends for the maintenance mechanic, but it raises havoc with the work schedule and control system.

All job requests, no matter how small, should be routed to the maintenance office.

Buy the Right Tools

An efficient maintenance organization must have sufficient tools to do its work. Management must be made to realize that expenditures for maintenance equipment will readily pay for themselves. It's up to the maintenance supervisor to properly organize and present his requests for the tools and machines he needs.

Keep Supplies Orderly

Since many departments are too small to have a maintenance stock clerk, stores are often a problem. Maintenance personnel often have unrestricted access to the supplies. This condition may result in poor control of the stock, because workers may ignore the system of formal requisition when they are rushed.

If one man cannot be placed in charge of the stores, supplies should be placed in charge of the main stockroom. If this assignment is made, one definite area should be set aside for all maintenance supplies to simplify supervision.

Maintenance stores should be properly controlled. An inventory-control system should be used for each item of stock. The card-index system that is used for plant supplies should be used on all maintenance supplies.

Develop New Ideas

The maintenance supervisor must be alert to new trends and methods. He must constantly develop new ideas and quicker, less expensive ways of doing his work.

With the increased use of automatic

For more information, write direct or use Reader Service post card.

And so drapable, so pleasant to work with and wear, so lightweight, so surprisingly *strong!* That's a word picture of many of today's most wanted fabrics, made possible by the use of Du Pont's modern-living fibers alone or in blends.

Softness is just one of the values you can have when you choose a Du Pont fiber to help you satisfy today's more demanding customers. There are other properties built right into the fibers, too . . . easy washability, fast drying, wrinkle resistance, pleat and shape retention, exciting beauty at small cost.

All these are positive advantages. You can feel and see and profit by them. And they are *planned* advantages . . . planned to meet the needs of modern living. You can count on Du Pont's leadership to help you keep pace with the newest advances in fiber research. And you can count on increased sales when you create fabrics for clothes and home furnishings made from Du Pont modern-living fibers.

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CONTROLLED NAPPING

is here

90-inch, 24-roll double-action napper

Announcing

A NEWLY DESIGNED NAPPING MACHINE which simplifies this important step in cloth finishing. Take the old trial and error methods out of your napping room by investigating the 12 features listed below which add up to increased production and lower costs.

- completely safe operation
- less lubrication down time
- improved fabric protection
- complete fabric versatility
- elimination of guess-work
- redesigned enclosed drive and gears
- ease of cleaning
- negligible lint and fly problem
- simplified changes of cloth speed
- anti-friction bearings
- no change gears
- easily changed to single acting

Get the Best – get a NEW SIMPLEX

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Please let us have more information on the new Davis & Furber Napper.

*Name*_____

*Position*_____

*Company*_____

*City*_____ *State*_____

machinery, the investment per production worker increases, and the maintenance department is expected to keep production schedules on time.

Organized Maintenance

(*Continued from page 121*)

dent and general manager. All three men then discuss together the need for the new equipment, and action is taken.

Minor repairs to the building and roofs are made by the maintenance department. New roofs are applied and other major building repairs and electrical work, including motor winding, are done by outside contractors. Painting is done by contract, too. Competent contractors can do large jobs cheaper than the maintenance department can.

When major building repairs are necessary, the master mechanic reports the need for work to the superintendent, who passes the request along to the vice president and general manager.

Plant expansion and modernization or replacement of existing manufacturing machinery is always done under the direction of J. E. Sirrine Co., who has handled all engineering at Henderson Mills for 28 yr.

Machinery Manufacturers Furnish Engineering Services

When new machinery is installed—right now looms, spinning frames, and cards—the machinery manufacturer usually sets up the machinery, makes basic settings, and instructs the operators on new work methods. Then the mill operates the machinery.

This procedure wasn't true, however, when control instruments were recently added to a slasher. The maintenance department installed the instruments and wired them to a central panel. This slasher is sizing warps for good weaving conditions at an almost constant speed of 95 yd. per min.

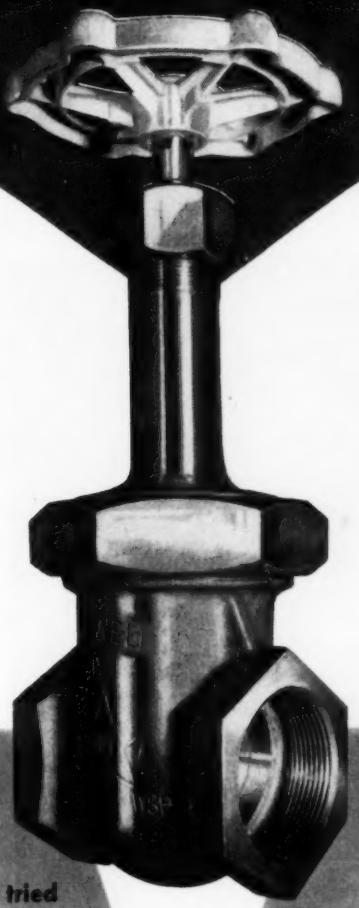
Master Mechanic Keeps Informed

The master mechanic keeps a file in his office of books on engineering and mechanics and keeps catalogs on all the equipment he services.

In addition, he reads magazines on electrical engineering and textile manufacturing. He visits other nearby plants to observe their methods, and these plants, in turn, send men to Henderson Mills.

Recently the master mechanic attended a meeting of an engineering

To know how good valves can be, install valves that are known to be good



DEPENDABLE VALVES SINCE 1846

Fig. 375—800-pound Bronze Gate Valve with renewable, wear-resisting "Powellium" nickel-bronze disc.

If you already have Powell Valves in your lines, you are enjoying flow control at its best. But possibly you have never tried valves engineered to meet specific service conditions under which they must operate. To find out how good valves really can be, install Powell.

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Cincinnati 22, Ohio

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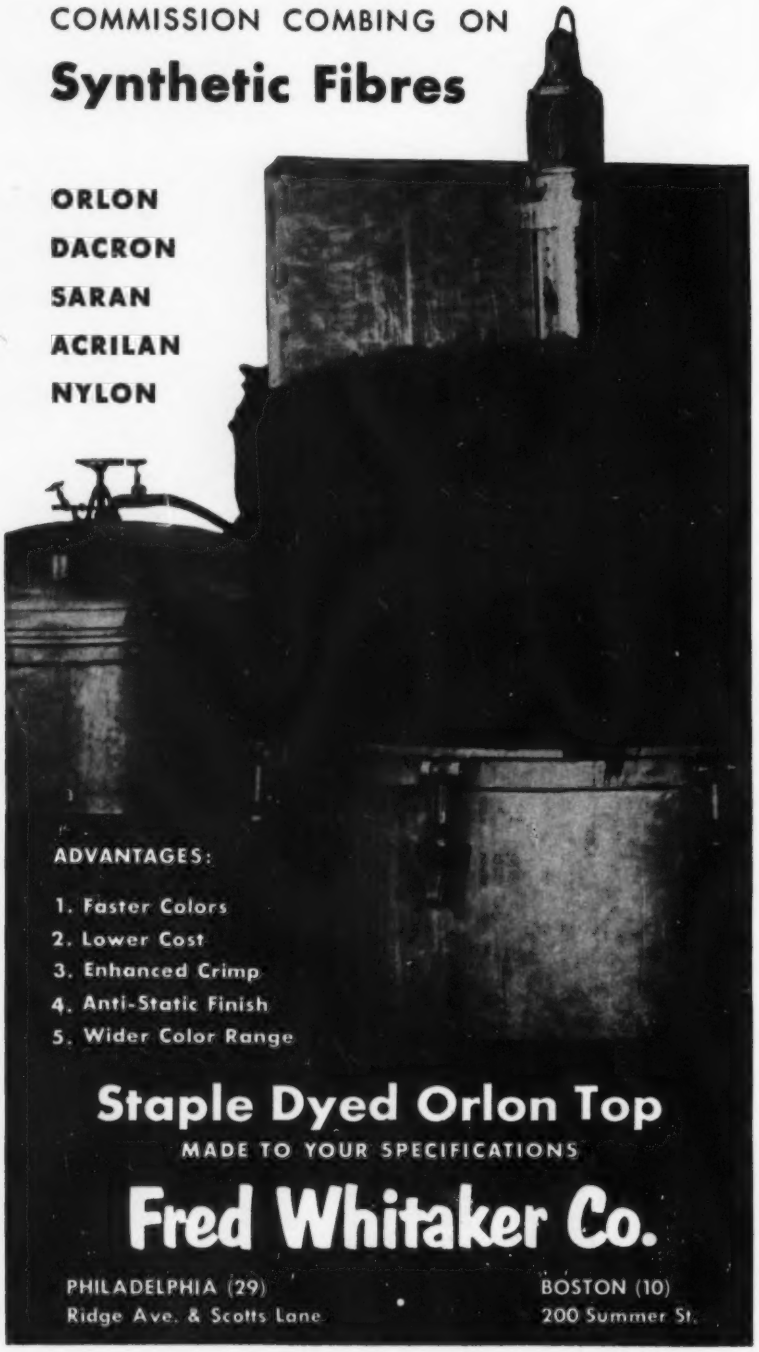

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organization and, while there, became interested in a ground-detector instrument that was new to him. As a result of this interest, he tried out a ground detector in his own plant, and Henderson Mills bought one.

The Master Mechanic Trains His Own Men

The master mechanic has built up over a period of years a small, well-trained, well-organized crew of maintenance workers.

Qualifications in selecting and keeping maintenance workers are:

1. The employee must attend work regularly.
2. He must be interested in his work.
3. He must be capable of doing any type of job.

Each employee is trained by the master mechanic personally. Trainees usually have had no previous experience in textile, machine, or electrical work. One man is trained at a time. When he has worked with the maintenance department for a few months, he can do most types of work that the department is called on to do.

For example, a machinist can fix a magnetic switch in any of the control panels. A mechanic doubles as a carpenter, can tear down a magnetic switch, and can do rough lathe work.

Any man in the maintenance department can use the welding torch.

The master mechanic keeps the time of all his employees.

All supplies for the maintenance department except pipe fittings are stored in the machine shop. The supplies are charged directly to the maintenance department when they are received from the shipper. New orders for supplies are sent to materials suppliers once each week.

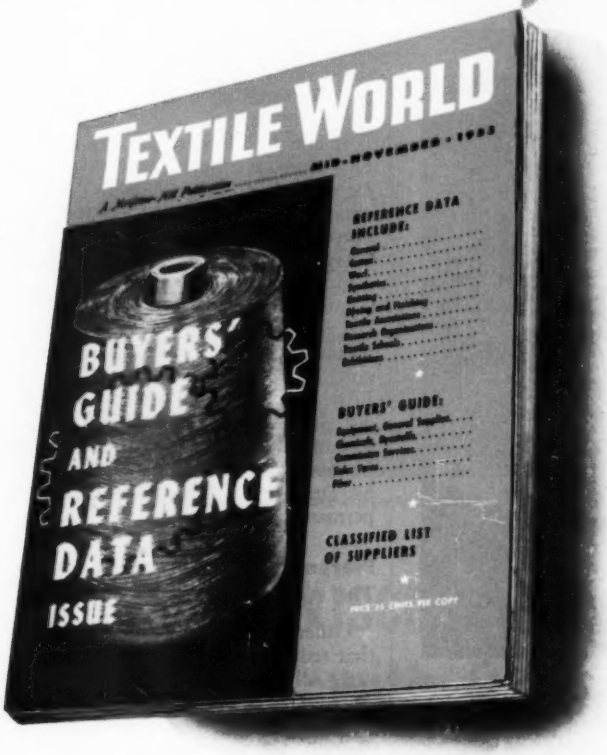
Simple Records Are Kept Of All Work Done

Work by maintenance employees cannot be made in any production department until an order signed by the department overseer is sent to the master mechanic's office. The order gives the machine number, the time the machine is stopped, and, as nearly as possible, the trouble.

When the mechanic receives the order, he goes immediately to the machine, fixes it, and marks on the order the time the machine is started. He adds to the order the cause of the failure and the material used to correct the trouble and signs his name.

All completed orders are filed in the maintenance office. When the master mechanic goes to work each morning, he reviews the work orders

Announcing . . .



AN EXTRA ISSUE of TEXTILE WORLD

. . . the BUYERS' GUIDE AND REFERENCE DATA ISSUE

Every subscriber to* TEXTILE WORLD *will receive thirteen issues, beginning this year!

In mid-November will be published, as an extra number, the BUYERS' GUIDE and REFERENCE DATA issue. This will be crammed with useful information about machines, equipment, supplies, and services that can help you to cut costs, improve efficiency, increase production, solve problems, and make better products.

The REFERENCE DATA section will carry charts, tables, and formulas of great value to mill men. These will include, for example, TEXTILE WORLD's famous yarn-number conversion table, its yarn-strength tables, its cloth-analysis chart, recommendations for dyeing the various synthetic fibers, and over a hundred other units of useful textile and engineering data. There will be no looking-up place like this REFERENCE DATA section anywhere else in the industry. You will find it a constant help in your work.

The BUYERS' GUIDE section will carry a classified list of manufacturers of machines, equipment, chemicals, dyestuffs, sales yarn, and other supplies. It will also include sources for raw fiber. It will guide you to commission services, such as throwsters, scourers, bleachers, dyers, mercerizers, finishers, etc. And it will list architects and engineers, factors, consultants, research laboratories, textile schools, and textile associations. Because of the completeness of this section and the unusually wide circulation of the publication, the 13th issue will become the standard buying guide for use by all types of mills and by all classes of mill executives.

And, furthermore, many advertisers will take space in this issue to provide you with the data you need to specify accurately just the equipment, supplies, or services that you require to improve your job.

Watch for the . . .

BUYERS' GUIDE and REFERENCE DATA Issue

in MID-NOVEMBER!

TEXTILE WORLD

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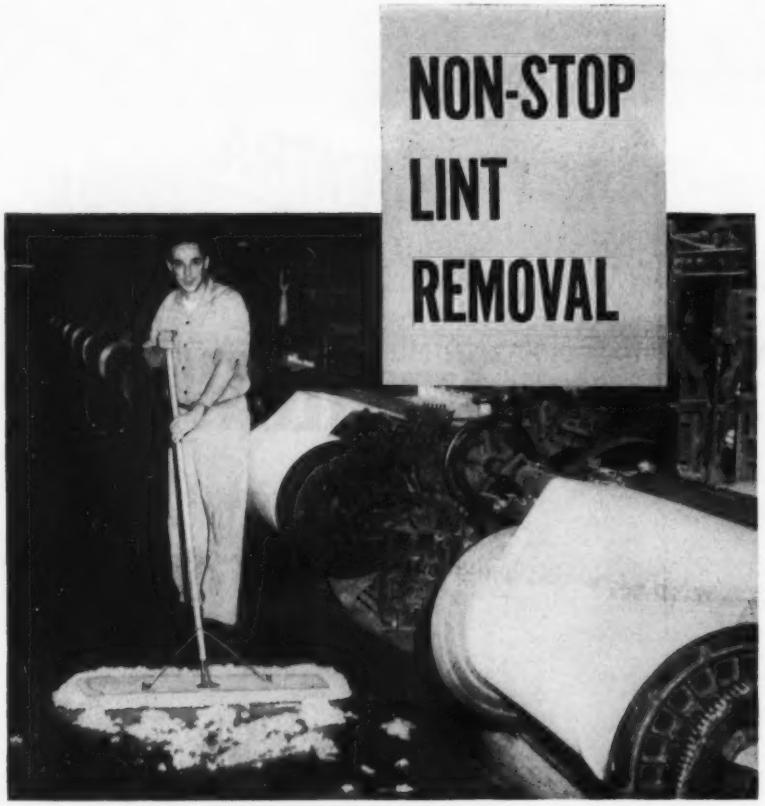
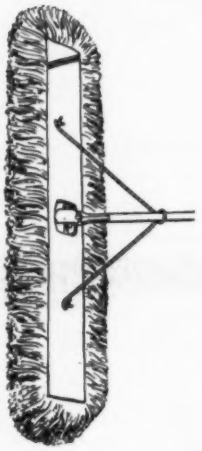
If you are a mill executive not already subscribing and would like to receive a copy of this great reference issue (plus all the other twelve issues) send $2.00 now for a one-year subscription. If you want to save money, send $4.00 for three years, 39 issues. Be sure to tell us the name of your mill, its address, and your title.



FULLER Launderable Sweeping Mop Gives You "Speed" Cleaning



You've got the green light all the way . . . just "wheel" right down the aisles with the Fuller Launderable Sweeping Mop. No stopping . . . no tapping . . . no backtracking. It's just one smooth, fast, lint-gathering operation.

And how this mop does grab the lint and dust! The loose ends are like thousands of tiny fingers eagerly reaching out to clutch and hold fast all the lint and loose dirt particles. The rugged metal frame and handle attachment prevents the mop head from rolling on the floor.

The mop heads are simple to replace. Just unzip the zipper, slip the head off the metal frame. No tapes or ties. Buy three heads for each handle. Have one in use, one in the laundry, and one in reserve.

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for the past three shifts. He transfers the information on the work orders to cards that are his permanent record.

Each department has a card. For example, if a motor stopped in the spinning room, all the information would be recorded on the spinning-room card. So little trouble occurs that few cards are needed to keep complete records.

If a certain motor, say in the spinning room, is stopped more than once for service, it is torn down the next week end or at the next production slowdown (when the spinning frame is stopped for maintenance by the section man), and the trouble is eliminated.

Other maintenance work is done following daily studies of material entered on the permanent record. Little jobs that would soon result in big jobs are caught and corrected. The master mechanic estimates that he would need two additional men in his department if he did not use the permanent record.

Preventive Maintenance Reduces The Amount of Work Done

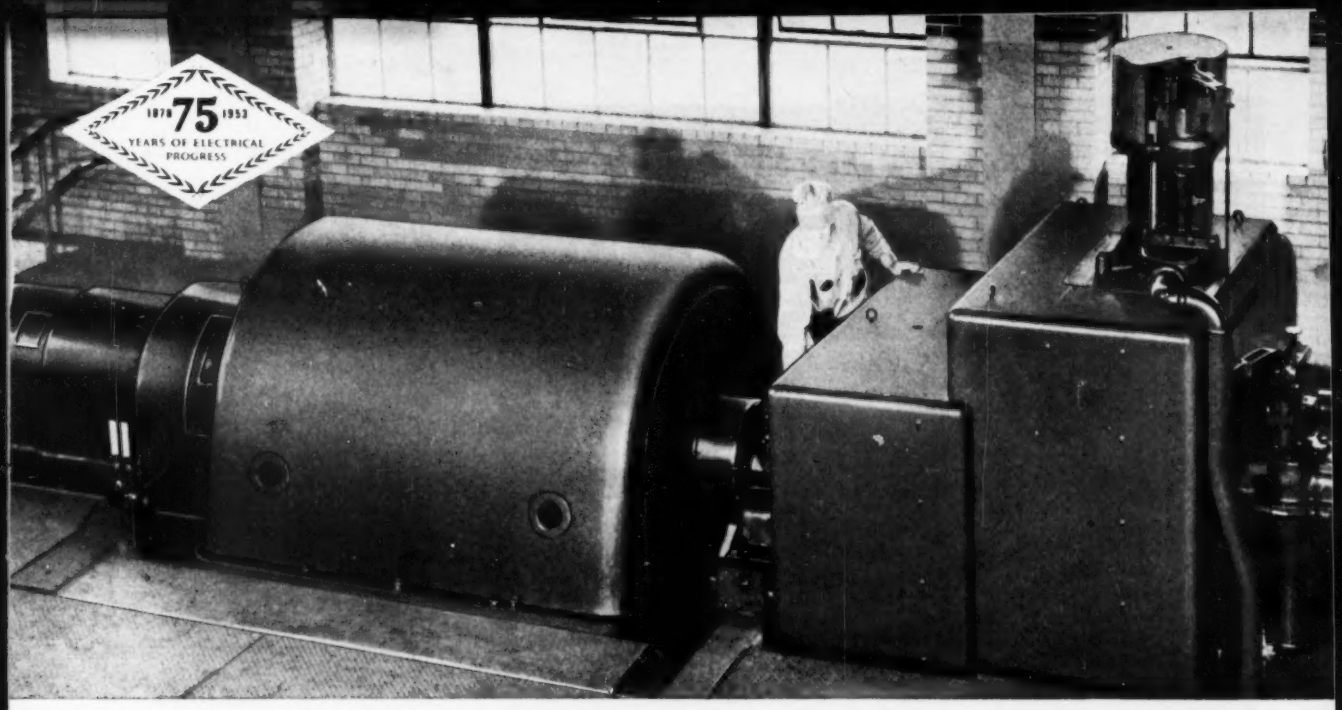
Other types of maintenance work that reduce labor are:

1. All motors are blown out with an air hose each week end.
2. All sleeve-type motors are cleaned out, and the oil is changed twice each year.
3. The boilers are torn down and inspected twice each year.
4. Oil is changed in the air compressors every 4 mo.
5. Oil is changed in the overhead traveling cleaners every 4 mo.
6. All motors and machines are checked for loose grounds every 60 days. (This work is done on the second and third shifts and requires 8 to 12 hr.)

This and other preventive maintenance has resulted in few production stops from breakdowns of equipment served by the eight-man crew. During the past 12 mo. lost production from maintenance breakdowns in all mill departments was less than 0.01%. The total cost of the maintenance of the plant is only 1% of the total operating cost of the plant.

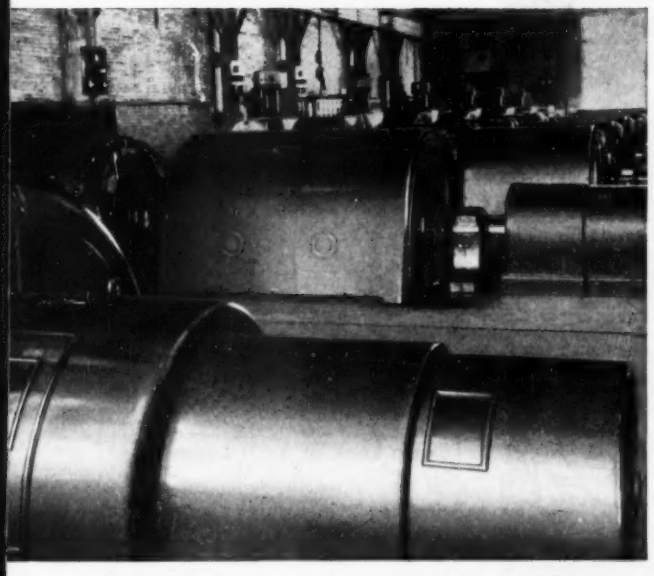
Keeping a backlog of maintenance work to be done results in low maintenance costs. A list of jobs to be done by each man is posted so that everyone can keep busy between important jobs.

Work is organized so that the master mechanic can leave the plant for days, when necessary, and the maintenance work keeps moving forward.



General Electric 3000 KW turbine-generator at American Viscose's Marcus Hook, Pa., plant takes initial steam at 400 psig, exhausts to process at 20 psig.

American Viscose Gets Maximum Steam Utilization with G-E Turbine-Generators



Turbine hall at one of American Viscose's plants has eight G-E units operating under varying steam conditions for optimum thermal efficiency.

44 Units Reduce Boiler Steam to Process Pressures, Generate Power As By-Product

Over a period of thirty years, the American Viscose Corporation has installed in six of its plants, 44 G-E turbine-generators to deliver large amounts of steam used in digesters, heaters, and other processes. The turbines, rated from 400 KW to 7500 KW, operate on initial steam pressures from 200 psig to 850 psig.

Like many other companies which require huge amounts of process steam, American Viscose enjoys the economy of generating steam at high pressures, running the steam through turbines for economical by-product power, and extracting steam at the required pressure for plant operations.

If your plant uses process steam, why not take advantage of G.E.'s application engineering service. G.E. will work with your engineers to study and recommend ways to increase your plant thermal efficiency. Efficient, flexible, economical turbine-generators can mean savings in fuel dollars to you. Get more for your turbine dollar with G-E turbine-generators. General Electric, Schenectady 5, N. Y.

256-4

You can put your confidence in—

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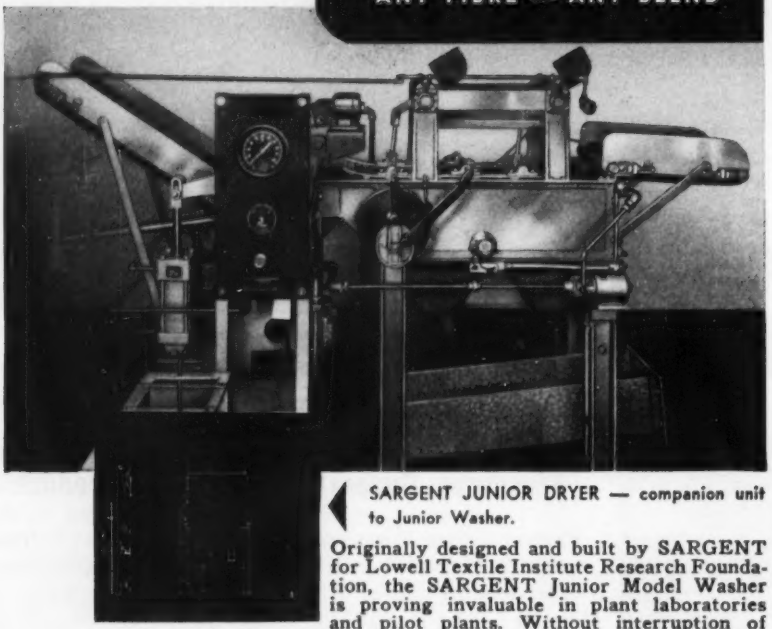
They're New...

SARGENT'S LABORATORY TWINS

A JUNIOR SIZE WASHER

and a Sample Dryer

ANY FIBRE — ANY BLEND



SARGENT JUNIOR DRYER — companion unit to Junior Washer.

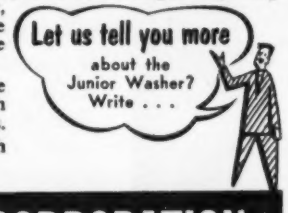
Originally designed and built by SARGENT for Lowell Textile Institute Research Foundation, the SARGENT Junior Model Washer is proving invaluable in plant laboratories and pilot plants. Without interruption of regular production work the Junior Washer will determine accurately the proper washer train process for most economical operation. The perfect room mate for SARGENT'S Junior Dryer.

Detergent concentration, alkali concentration, process timing . . . any and every possible combination of factors making for the one best way to scour, bleach, acidify, may be easily and accurately determined with this model.

Complete instrumentation for controlling and recording every step of the process is standard equipment, enabling process, once determined, to be transferred to regular production line without loss of time.

Stainless steel bowls 36" long, 10" wide — two 60° extra-steep hoppers to each bowl. Liquor capacity about 16 gallons.

Design and operation identical with standard size SARGENT Washers.



C. G. SARGENT'S SONS CORPORATION

Graniteville, SINCE 1853 Massachusetts

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HUGH WILLIAMS & CO., 47 Colborne St., Toronto 1, Canada

Refrigerated Air

(*Continued from page 127*)

mounted in the opening to the air washers. A Neoprene wiper on a traveling blade automatically moves from top to bottom, strips the lint, and places it in a doffing box. The reclaimed lint from the screen is sold as card strips.

Flexidur washer nozzles with stainless-steel inserts were installed in the air washers themselves to prevent deterioration of the spray pattern caused by erosion of the nozzle.

The air-conditioning system is controlled at a central instrument board. Operation and maintenance of the system is the responsibility of Lawrence Hawkins, an air-conditioning engineer.

Weave-Room Modernization

(*Continued from page 107*)

cause the springs are fully enclosed.

4. The treadle rolls follow the cams evenly through the full cycle with less warp tension.

5. Little attention is required for resetting harnesses because the harness straps don't stretch.

6. Adjustments of spring tension and harness strapping are easy.

The overseer of weaving at a mill where several hundred looms are equipped with clock-spring tops recently said, "These looms have been running a year since the new harness motions were added. Weave-room production has been increased by 1% as a direct result of this installation. I'm pleased with the performance of the looms and so is our top management."

Another overseer of weaving said, "We don't have any definite production figures on the superiority of clock-spring tops because we haven't had time to change all the harness motions, but we know we're getting higher production and fewer seconds with the clock-spring tops."

Take a Look at Your Loom Drive

If your drive isn't efficient, you're going to lose a lot of production through slippage; and your seconds will be increased through set marks when looms are restarted at normal stoppages.

One mill surveyed recently was equipped with a motor drive of the thrust type. Production was lost because tachometer checks showed that all looms were not running at the same speed. This mill added antifriction bearings to the thrust drive, and

What Does "Obsolete" Mean?

We started thinking about weave-room machinery and obsolescence the other day when a manufacturer of electronic equipment said, "All the instruments we make are obsolete at the end of four years. When that time comes, replacement or modernization is essential."

How about looms? You have to be your own judge, but this survey will give you some good starting points.

speed became constant on all looms.

Several types of new drives are available. You can take your choice of three types for E-model looms that will result in:

1. Higher production from more constant speeds and from less loom stoppage for drive-part repairs.

2. Less seconds because there's no slippage at the beat-up of the cloth to result in wavy marks. Set marks are also reduced. Loom brakes operate more efficiently on new-type drives and the looms stop before the reed reaches the fell of the cloth.

3. Lower repair costs because there are few breakdowns on the new drives, and the number of replacement parts is reduced because there's little wear.

4. More spare time for loomfixers since they don't have to work on new drives as much as old ones. This spare time can be used to keep looms in better mechanical condition.

One weave-room man who had the changeover from an old drive to an individual motor drive said, "This drive represents about half of the money we spent on our looms to increase speed by 20 ppm. Our cloth quality and our production percentage at the higher speed is equal to the figures at the old low speed."

New Spreaders Are Streamlined

Old-type spreaders lost their appeal because many of them were so bulky that loomfixers could not get to the loom parts to work on the loom.

All new looms are equipped with spreaders or other types of main-shaft stabilizers to reduce vibration and make looms run more efficiently.

The new-type spreaders are also being placed on older looms with good results. The new spreaders are designed to occupy little space underneath the loom so that they do not prevent loomfixers from reaching any part of the loom easily. Looms equipped with spreaders run better because:

1. Flexing of the camshaft at the

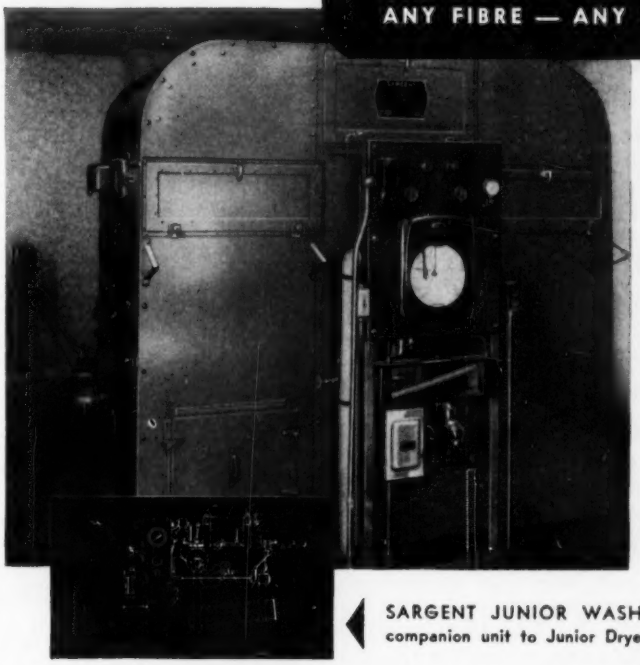
They're Terrific

SARGENT'S LABORATORY TWINS

A JUNIOR SIZE DRYER

and a Sample Washer

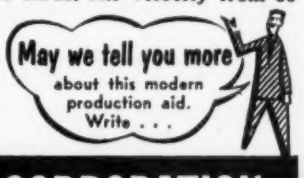
ANY FIBRE — ANY BLEND



SARGENT JUNIOR WASHER — companion unit to Junior Dryer.

Small enough for your pilot plant or your laboratory, SARGENT'S Junior Model Dryer will show you the one best economically practical way to dry all fibres, natural or synthetic staple. The perfect running mate to SARGENT'S Junior Washer. Establishes easily and accurately every factor that influences proper drying procedure for any fibre or blend.

Height — 7'1" Width — 7'6" Length — 8'10½". Selective recirculating air flow — updraft, downdraft or cross convection. Two small sample trays for very small-lot drying. Main chamber may be used for pole, tray or apron drying. Fan speeds variable from 180 to 1800 RPM. Air velocity from 50 to plus 1000 FPM. Complete instrumentation provided for control and recording of every phase in drying cycle. Once determined, drying process may be transferred to regular production line without change. For speedy, economical drying, set the cycle first on SARGENT'S Junior Model Dryer.



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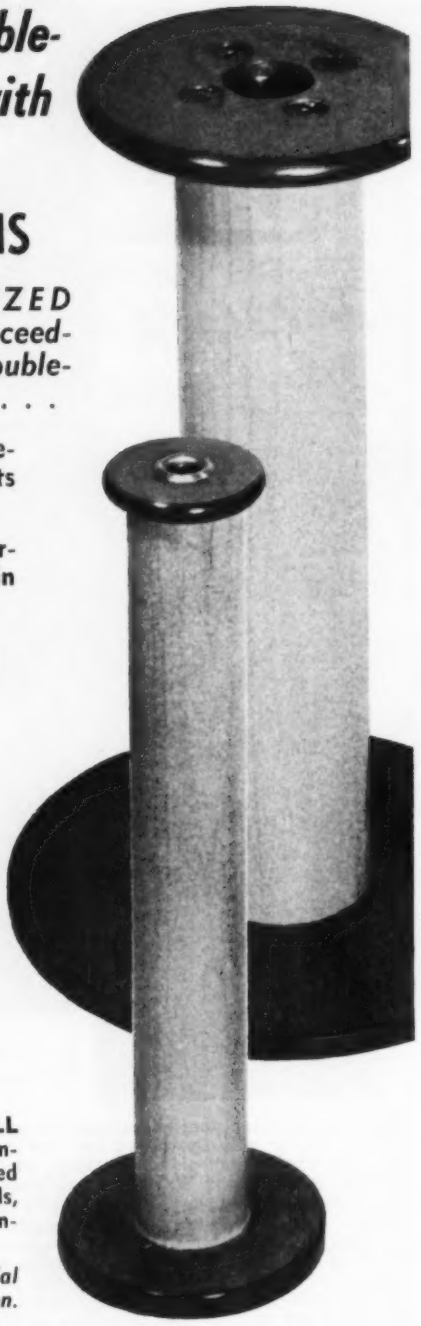
THE HARD VULCANIZED FIBRE HEADS assure exceedingly long wear with trouble-free production because . . .

- Every bobbin is specially designed and fabricated for its particular application.
- "Lock-in" brass spindle bearings prevent spindle wear in large size bobbins.
- Tubing prevents winding or twisting of the barrels of slim bobbins.
- Special anchor screws, on large size bobbins, guard the drive slot from wear.
- The hard vulcanized fibre heads remain smooth throughout the long life of these fine custom-made twister bobbins.
- Using them is true economy.



LESTERSHIRE BOBBINS OF ALL TYPES are made from hard vulcanized fibre, Phenolite (Laminated Bakelite), and other stable materials, to meet specific requirements of individual mills.

LEARN NOW how Lestershire special bobbins will improve your production.

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NATIONAL VULCANIZED FIBRE CO.—Detroit
NATIONAL VULCANIZED FIBRE CO.—Cleveland
NATIONAL VULCANIZED FIBRE CO.—Cincinnati

pick is reduced because the shafts are braced. Slamming is reduced.

2. Crankshafts don't bend at the beat-up of the cloth. You get more even cloth, fewer broken crankshafts, and less wear on the crankshaft itself and on the main crankshaft bearings.

The weave-room overseer of one mill where spreaders were recently added said, "We haven't used the spreaders long enough to have any figures on dollars-and-cents savings, but we have noticed an improvement in our production and also find fewer looms flagged for slamming."

New Let-Offs Are Improved

If you're running E-model looms with Roper let-offs, you can modernize them by reaming the parts (the internal gear, for example) and pressing Oilite bushings into them.

At the same time, the let-offs should be overhauled so that they will let off evenly.

On X-2, XP, and XK looms, Bartlett let-offs are more satisfactory than Roper let-offs if you're running fine filling or a type of cloth that must be free from wavy marks.

Here's what an overseer of weaving said: "We've had these 600 new looms for only a few months. All but 11 of them came equipped with Bartlet let-offs. They're doing a fine job of making even cloth with 60s warp and filling on an 88x80 weave. We have replaced the Roper let-offs on the 11 looms with Bartlett let-offs.

"Lint does not accumulate in the critical parts of the Bartlett let-off, and the units require little attention."

If you're weaving filament-rayon fabrics you should use the Bartlett let-off with antifriction bearings to eliminate wavy cloth; there's no investment you can make in loom parts that will result in better cloth.

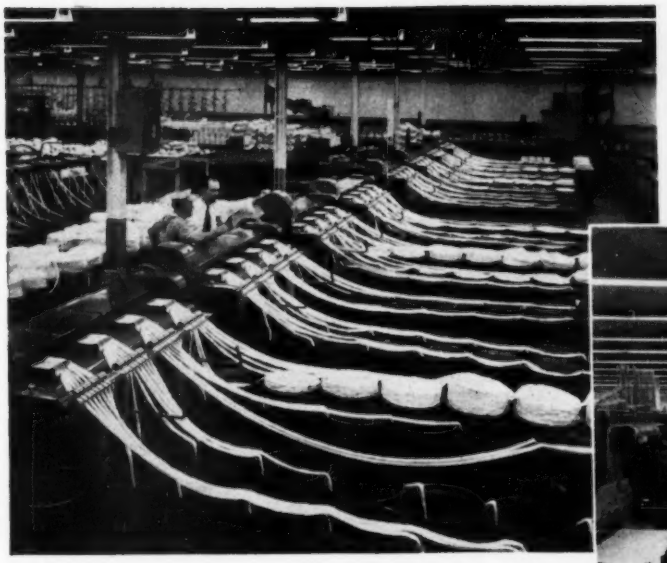
The large worm-wheel shaft in this type of let-off will not bend when warp beams are placed on it.

If you're running multiple-shuttle looms of the older type without let-offs, you can make better cloth by adding one of the new-type let-offs. You may have to change your loom beams, but that will be an improvement too because you can buy larger ones for more yards of warp per beam.

The superintendent of weaving in a weave room making wool fabrics said, "All our looms are equipped with full-automatic let-offs. We regulate the weights on full warps; and on most of our weaves, we forget the let-off until the warp is replaced."

Several Other Developments Improve Weaving Conditions

To be able to weave more types of fabrics, several mills have converted



At first glance...

. . . you don't see much Bahnson Equipment in these photographs—but it's there.

Even if you visited this new plant, you might not notice the air conditioning system immediately—but it's there.

And it's there for a purpose — to provide Lyons Synthetics Division of Orr Mills with 283,400 cubic feet of clean, fresh air at the precise temperature and humidity needed. That's a complete change of air every few minutes; and the controlled atmosphere keeps the machines running perfectly . . . keeps fibers properly conditioned . . . keeps workers at peak efficiency.

So even if you don't see the gleaming ductwork and efficient Bahnson distribution grilles at first glance, you see and feel the **results** the moment you enter the rooms.

Hidden away overhead are the eight Bahnson Centrispray Washers that breathe life to those ducts . . . and hidden away in the office is an operating expense record that will soon show cost figures to prove, beyond all doubt, that this plant produces more cloth, and higher quality cloth, at lower unit cost.

Personnel records will show less lost time—while other records will show better machine operation, less maintenance, less down time.

We are proud to have been chosen to supply the air conditioning system at Orr Mills. We think it was a good choice because the Centrispray Air Washers, fans, controls, dampers, grilles, and most other components were designed and fabricated by Bahnson. The Bahnson Company can provide a completely integrated system because we have the experience and the engineers necessary . . . the machines and the men to operate them. In short, this system was built by textile air conditioning experts.

To learn more about Bahnson Textile Air Conditioning Systems, ask to have an engineer call, or write for a copy of our latest Catalog, 22A.

Bahnson Company

ENGINEERS AND MANUFACTURERS

WINSTON-SALEM, N. C.

B. F. Goodrich Chemical Company

Textile Highlights

FOR MAY

Better sales appeal for cottons

THERE is great interest in a new finishing treatment that improves the wearing qualities of cotton goods and gives other properties that make them more saleable to consumers.

The new finish, Hycar latices (water emulsions of a butadiene-acrylonitrile copolymer) not only lengthens the life of denim, sheeting and other constructions, but holds much of the improvement after washing. This is an improvement over conventional sizes which are lost during washing.

Specifically, Hycar latices give from 2 to 5 times more wear than untreated denims. In all cotton constructions after treatment, there is a big improvement in abrasion resistance and a more permanent, full hand. Other improvements by the use of Hycar latices are crease and wrinkle resistance and reduced shrinkage. Hycar latices can be padded on by the use of conventional equipment.

In addition to these latices, B. F. Goodrich Chemical Company manufactures a series of other chemicals for the textile industry. They cover a wide range of uses in providing better-quality finished textiles. A full discussion of these will be contained in a new textile bulletin to be available shortly. Write Dept. TK-2, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

B. F. Goodrich Chemical Company
A Division of The B. F. Goodrich Company

GEON polyvinyl materials • HYCAR American rubber • GOOD-RITE chemicals and plasticizers • HARMON colors

their 2x1 S looms to 4x1 looms, which are 75% automatic. Since four shuttles can be run after this conversion, weaves such as plaids and decorative checks can be woven.

The antifriction whiprolls supplied on new looms have improved cloth quality so much on synthetic fabrics (both filament and staple) that several mills are rebuilding old whiprolls and adding antifriction bearings. When these whiprolls are used, there's little chance that they will make wavy cloth. Set-mark conditions are also improved.

Endless checkstraps, when applied to looms in weave rooms where humidity conditions are fairly constant, result in fewer loom stops for strap replacements and show a large saving in checkstrap costs.

One mill running staple and filament fabrics on X-2 and XD looms shows an average endless-checkstrap cost of $0.38 per loom per month.

Many other mills are doing good jobs with endless checkstraps on X-2 and XD looms.

Several mills are using endless checkstraps on small numbers of E-model looms. Only one large installation (over 100 looms) was found in the survey.

Among other developments that are adding to better loom performance on older looms are:

1. Spring-type crankarms for single-shuttle looms
2. Larger, single-piece protector rods for S-3 and S-4 looms
3. Large shuttles and larger filling packages to run longer
4. Larger-diameter and stronger beam heads for larger warp beams
5. Larger and improved color-control parts for all S looms

A survey of your looms may show that several of these improved motions and loom parts can be applied to your looms to improve running conditions. A study of loom-stoppage checks for a period of several weeks will show which motions cut into weave-room production and cause seconds.

A few of the weave rooms studied in this survey had made little effort to keep their looms modernized. These mills will find it cheaper to buy new looms or rebuilt ones than to try to bring their old looms back to efficient service.

Get that SCRAP Back to WORK!

TEXTILE BANKING COMPANY

Inc.

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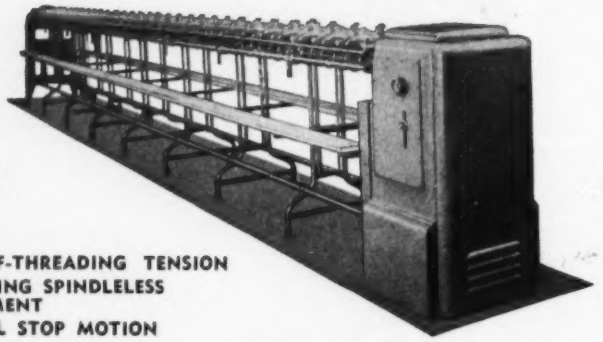
Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

For Perfect Spools at Higher Speeds

SIPP-EASTWOOD WINDER-REDRAW



IT'S A SIPP EASTWOOD

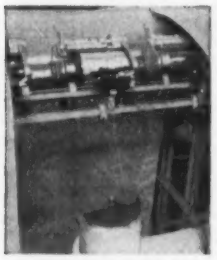
- WITH SELF-THREADING TENSION
- SELF-OPENING SPINDLELESS ATTACHMENT
- FILL SPOOL STOP MOTION

Deliberately designed for perfect spools at higher speeds and greatest possible automatic operation. This brand new winder-redraw requires a minimum of attention during operation and is easy to clean and maintain.

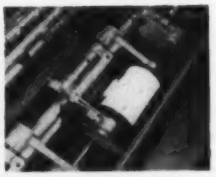
FEATURES:

1. Washer type self-threading tension fastened to traverse rail is easily adjustable and quickly cleaned. Eliminates all threading operations.
2. Gate type tensions available with self-threading Alsimag guides for nylon.
3. Full spool stop motion prevents overrun bobbins.
4. The drive and traverse mechanism is enclosed in one complete unit and is lubricated by a circulating oil bath.
5. Traverse adjustment is independent on each side of machine and can be adjusted from 3½" to 7" traverse without changing cam.
6. Speed changes are readily accomplished through the use of a handwheel.
7. Winds per stroke easily adjustable.
8. Single or double drive self-opening spindleless brackets are available.
9. Easily changed for "S" or "Z" twist by use of reversing switch.
10. Tachometer available for easy speed readings.

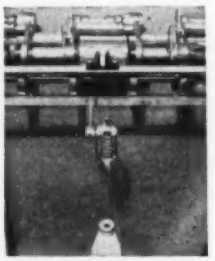
Write for Descriptive Folder



Self-Threading Tension



Full Spool Stop Motion



Gate Type Tension

SIPP-EASTWOOD CORPORTION

47 Keen Street **Paterson, New Jersey**

DOMESTIC AGENTS:

S. FRED TOLL
2116 W. Morehead Street
Charlotte 1, N. C.

J. S. FALLOW & CO.
4846 Sherbrooke St. West
Montreal, Canada

J. S. FALLOW & CO.
New Bedford,
Mass.

Consider the Fundamentals

(*Continued from page 131*)

the percentage weight of material removed is the same.

How To Judge Machine Effectiveness

A statistical analysis of the weight of the pieces of cotton delivered by a machine is helpful in comparing opening and picking equipment. Such an analysis may be made by weighing a large number of the cotton pieces, 500 to 1,000, that are collected as they leave the machine. The average weight of the pieces can be determined and a frequency diagram made to show the number of pieces in each weight range. A comparison of average size of pieces of cotton entering a machine (and the frequency diagram of these pieces) with the average size of the pieces of cotton leaving the machine (and the frequency diagram of these pieces) gives an indication of the effectiveness of the machine in reducing the piece size of the stock.

The technique of selecting the actual pieces of cotton to be weighed may seem difficult at first glance, but a little experience proves the selection to be easy. Whenever there is a question as to the composition of a piece, this aggregate need not be used, because many other clear-cut pieces are available. This experimental procedure is of special interest because the results of a test can be duplicated.

Needed—A Good Method Of Comparing Waste

Waste consists of trash, dirt, leaf, and some fiber. The quality of the waste is sometimes judged visually by such terms as "rich" or "lean." A "rich" waste is one that is considered to be too bright and to have too much cotton fiber in it. A "lean" waste is one in which there is little cotton fiber. At each mill, experience dictates a type of waste that is most economical and satisfactory for that mill.

There are, however, no standards for the visual comparison of waste. Any attempt to make standard grade boxes for waste similar to the standard grade boxes for cotton soon proves to be impractical because of the way the dirt sifts from the surface of the sample. Check tests may be made on a machine or beater to determine the weight and appearance of the waste removed from a known quantity of cotton, and this waste is sometimes compared for quality on a Shirley analyzer.

A method of comparing waste is needed to indicate the amounts of motes, trash, and lint and to show a fiber-length distribution of the lint. The judgment of an experienced mill man is still the most effective method of comparing the quality of waste.

Trash Must Be Surfaced Before It Can Be Removed

Although some of the leaf and trash is broken by each successive beater, some large pieces are carried forward with the cotton aggregates. Pieces of leaf, trash, and motes must be on the surface of an aggregate of cotton before they can be removed.

Trash in the interior of the aggregate

Always Uniform

Precision is never an accident. Unvarying quality must be put there by the maker . . . whether it's in Victor Mill Starch, bolts or screws.

Mill men know that Victor's uniformity shows up in better penetration, stronger warps, greater smoothness, fewer slashing problems.

That's why both Victor and the Keever man are known as "The Weaver's Friend."

TEXTILE SALES DIVISION
1200, WOODSIDE BUILDING
GREENVILLE, SOUTH CAROLINA
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THE KEEVER STARCH CO. ★ GENERAL OFFICES ★ COLUMBUS 15, OHIO
Corn, wheat and other grain products for industry since 1898

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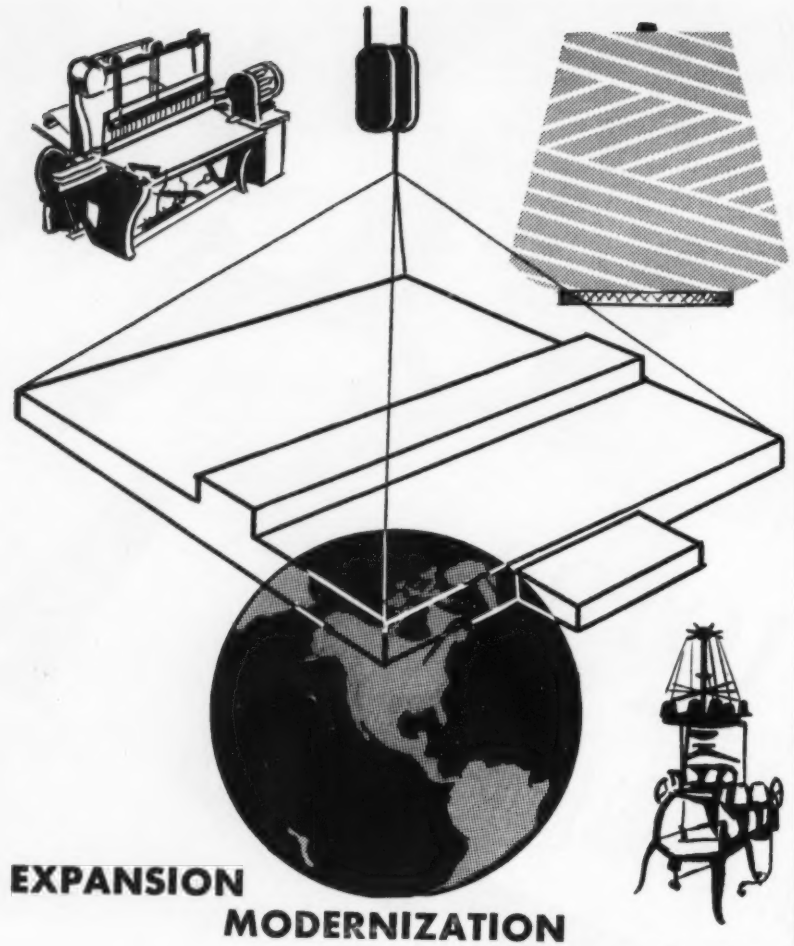

EXPANSION
MODERNIZATION
NEW FACILITIES

THE KULJIAN CORPORATION OFFERS THESE SERVICES FOR THE TEXTILE INDUSTRY THROUGHOUT THE WORLD

ENGINEERING Preliminary studies and designs followed by detailed working drawings and specifications. (Services of resident engineer are optional.)

CONSTRUCTION Project management, including coordination of subcontractors and field forces. (Accounting and purchasing services are optional.)

ENGINEERING AND CONSTRUCTION—Undivided responsibility, from preliminary studies to completed construction.

Steam Generation & Utilization
Electrical Generation & Distribution
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Spinning, Weaving and Knitting Mills
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will be carried forward intact to the next beater. The removal of dirt and trash may be accomplished best by reducing the cotton into aggregates as small as possible as early and as gently as possible.

The amount of fine trash increases progressively with the number of beaters involved in the processing of stock. Each successive beater appears to pulverize some trash, which is then carried forward with the cotton. Although the pieces of trash removed by the early beaters tend to be larger and heavier on the average than those removed by the subsequent beaters, some large, heavy pieces are carried forward intact in the clumps of cotton to the final beater.

An Air Stream Cannot Be Selective

The velocity of an air stream that will convey cotton aggregates must be greater than that of a minimum flow that will float the aggregates. Since the projected area of an object is related to its air drag, the space filled by a cotton aggregate is important with reference to the velocity of an air stream required to convey the aggregate.

Our tests show that an air stream is not selective with reference to the transportation of cotton and much of the leaf and trash normally in that cotton. An air stream required to float a cotton aggregate from the first beater could also carry over 30% by weight of the trash in the droppings of this beater. Air velocities necessary to convey cotton are of sufficient magnitude to also carry much of the leaf and trash whose removal is one of the objectives of opening and picking equipment.

Saco-Lowell

(*Continued from page 129*)

the screens and gives a better sheeting than was possible with the older methods. The resulting lap is more nearly uniform from top to bottom because the cotton is thoroughly bloomed. And because the immature seeds are removed before calendering, there are not so many oil spots and seed coatings in the resulting lap. There is no tendency of the lap to split when it is rolled up on the calender. This method of picking, used in conjunction with the pneumatic rack control, results in a firmer and stronger lap than it has been possible to obtain previously.

The Gyrostatic Opener Has the Same Principles

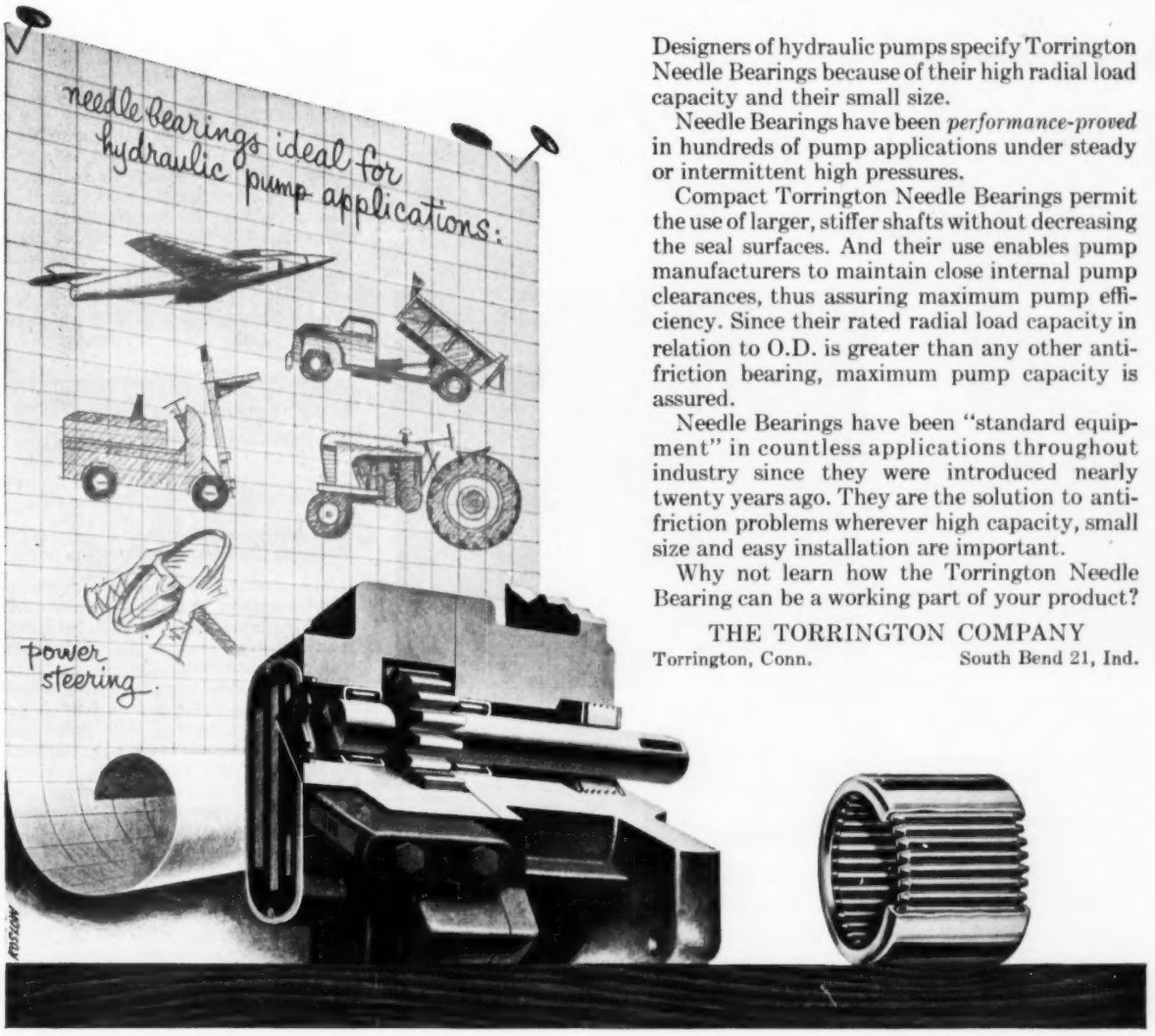
The Gyrostatic opener, which incorporates some of the principles just described, will fit into the opening line as follows:

Four or more No. 7 feeders will deliver the cotton to a feed table. From the feed table the stock is delivered by a No. 11 condenser to a control feed chute that deposits the cotton uniformly on the apron of the Gyrostatic opener. The opener has a 16-in.-dia. beater, feed rolls, a fringe roll, and two or more Gyro grids. The cotton is delivered into a specially constructed exhaust outlet with air-draft balancing controls—no cages.

For the first time in an opening ma-

Need a high capacity bearing with small size?

here's how hydraulic pump manufacturers get it with **NEEDLE BEARINGS**



Designers of hydraulic pumps specify Torrington Needle Bearings because of their high radial load capacity and their small size.

Needle Bearings have been *performance-proved* in hundreds of pump applications under steady or intermittent high pressures.

Compact Torrington Needle Bearings permit the use of larger, stiffer shafts without decreasing the seal surfaces. And their use enables pump manufacturers to maintain close internal pump clearances, thus assuring maximum pump efficiency. Since their rated radial load capacity in relation to O.D. is greater than any other anti-friction bearing, maximum pump capacity is assured.

Needle Bearings have been "standard equipment" in countless applications throughout industry since they were introduced nearly twenty years ago. They are the solution to anti-friction problems wherever high capacity, small size and easy installation are important.

Why not learn how the Torrington Needle Bearing can be a working part of your product?

THE TORRINGTON COMPANY

Torrington, Conn. South Bend 21, Ind.

TORRINGTON *NEEDLE* **BEARINGS**

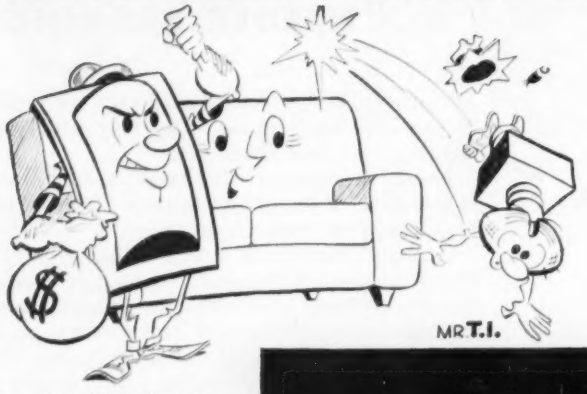
Needle • Spherical Roller • Tapered Roller • Straight Roller • Ball • Needle Rollers

Trade-marks of some of the leading hydraulic pump and motor manufacturers whose products enjoy the benefits of Needle Bearings.

EATON · Hercules · GEROTOR · HYDRECO · Kingston · JOHN A. ZINK COMPANY · WEBSTER ELECTRIC · GW · MARION · Pesco PRODUCTS DIVISION

FURNITURE MANUFACTURER Reports:

ERIEZ SPIKED APRON MAGNETS INCREASE GARNETT CLOTHING LIFE 300%



Preventing $5400 damage to garnetts in 3 years' time . . . increasing the life of garnett clothing three times . . . precluding fires in process lines . . . eliminating costly downtime — that's the fine record of three 58" Eriez Spiked Apron Magnets at the Chicago plant of a leading furniture manufacturer. Installed on feeders ahead of the garnetts, the magnets pull several pounds of tacks, staples and other tramp iron each day from waste cotton used to make batting for the company's cushions and other fine upholstered furniture. "The Eriez Spiked Apron Magnets are doing such a fine job of eliminating tramp iron from our lines, that operation without them would now be unthinkable!"

Eriez Spiked Apron Magnet was the first permanent magnet specifically designed for textile applications. Brackets, hinges, textile lift handles . . . everything necessary to mount and put into operation are included in the package. With Eriez Spiked Apron Magnets on your feeders, no tramp iron can ever get through to chew up cards, garnetts, etc., or to start fires!

Here are 5 features exclusive with Eriez magnetic separators:

1. Riveted construction adds rigidity . . . increases structural strength.
2. Cover adds to longitudinal stiffness . . . prevents tampering and accumulation of iron on backs of castings with consequent shorting of magnetic circuit.
3. Two-section magnet . . . makes cleaning quick, simple, easy.
4. Insulation confines magnetic strength to working surface . . . no bleeding to surrounding areas.
5. Flush air gap prevents gathering of fine iron which can short out magnetic field.

Write today for FREE 6-page Bulletin 563 which describes all Eriez magnetic separator installations for the textile industry.

ERIEZ MANUFACTURING COMPANY

11 Magnet Drive • Erie, Pennsylvania

Nine Out of Ten Textile Mills Specify ERIEZ

chine, provision has been made to adjust the centrifugal forces of the beater by the centripetal forces of the inrushing air stream. The exhaust outlet is connected with a pipe line to the condenser feed of a lattice opener, which feeds a distributor.

The beater and fan speeds will vary with the type of cotton used and with the amount of cleaning required. Beater speeds of 500 to 750 rpm. have been found satisfactory. Fan speeds for Indian cotton with short, coarse fiber may require fan speeds up to 1,200 rpm., but for American and Egyptian cottons these speeds may be reduced to as low as 600 rpm.

Many different cottons have been run experimentally in our laboratory, and a pilot installation is now being tested in a New England mill. At present, no equipment of this type is available for general sale. We believe that the system described, which results in the complete disintegration of the bunches of fiber almost at the very start with relatively few beatings at low beater speeds, will produce better opening, cleaner and more uniform laps, and less degradation of cotton than any opening and picking system yet devised.

New British Machines

(*Continued from page 131*)

the mouthpiece and conveyed to the next machine of the sequence, the blender.

New Blending Machine Based on Volume, Not Weight

The attainment of a high degree of uniform opening at an early stage of processing suggested the possibilities for metering the opened fiber, as you would meter grain or similar materials.

The mechanical control of most natural and man-made fibers in bulk form is not an easy matter, as those who suffer from lap-weight variation know only too well. Failure to achieve such control inevitably calls for much otherwise unnecessary duplication of processing and too-frequent draft changes on subsequent machines.

Metering usually implies measurement of volume of liquids, gases, etc., where the density per unit volume is constant. With fibrous material reduced to uniform density by the disintegration of pressed masses to tufts of virtually uniform small size, the delivery of such material can be controlled within a very narrow margin of error, about 0.7%. Variations arising from the specific gravity of the several types of fibers can also be accommodated.

The blending machine shown in Fig. 2 may, for example, contain four units, each receiving the well-opened stock from its corresponding lattice opener. The delivery from each opening unit is controlled by a variable-speed drive.

Cotton in this finely opened state will not only blend more intimately, but it also can be more readily freed of its trash content and will require fewer beating points than are usually found on the more conventional equipment.

We believe that these new machines will have a marked effect upon the layout of the opening room of the future and will help to minimize the overbeating now used to achieve maximum trash extraction.

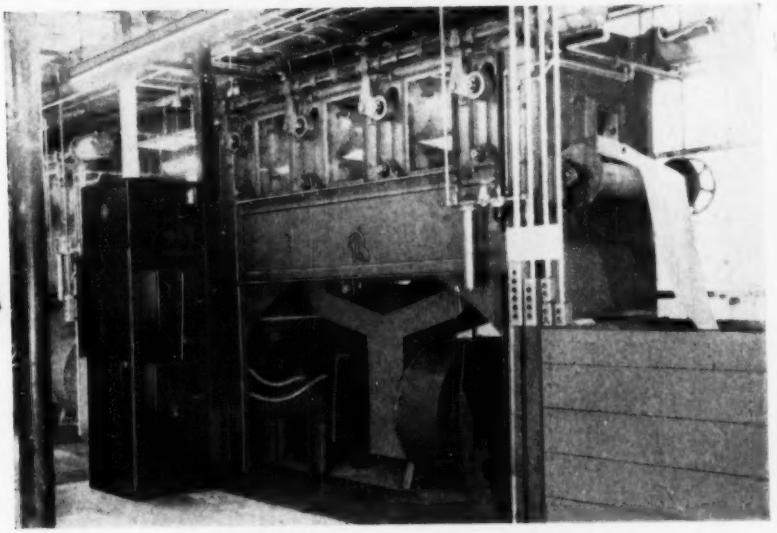
The Fleet Line for Woolens & Worsteds

CONTINUOUS CRUSHER

It's Modern!

It's Economical!!

It's Best!!!



Model CCT-4 (shown here) is dual-unit continuous crusher of 2 units in tandem

CHECK THESE FEATURES

- ✔ 1. Space-Saving, Labor-Saving
- ✔ 2. Accurate Dust Control and Exhaust
- ✔ 3. Crushes Better than Batch Process
- ✔ 4. Easy Operation, Uniform Pressure
- ✔ 5. Removable See-Through Panels
- ✔ 6. Practically No Vibration
- ✔ 7. Coiled Spring Pressure, under Pneumatic Cylinder Control
- ✔ 8. Adjusts for Desired Delivery Speed
- ✔ 9. Synchronizes with Carbonizing Range
- ✔ 10. Consorts with Any Carbonizing Range

NOTE: This completely redesigned and modernized Continuous Crusher makes possible one single continuous operation of acid soaking, drying, baking and crushing. Continuous neutralizing machine is also available to run in tandem with it if desired.

RIGGS AND LOMBARD INC.

FOOT OF SUFFOLK STREET, LOWELL, MASS.

Agents: Paul A. Merriam, 1491 Broad St., Prov., R. I. • Charles H. Dunker, 1236 So. Maple Ave., Los Angeles 15, Calif. Albert R. Breen, 80 E. Jackson Blvd., Chicago 4, Ill. • F. W. Warrington Co., 611 Johnston Bldg., Charlotte, N. C.

CONTROL HUMIDITY, ROOM TEMPERATURES

at WAUMBEC MILLS, Manchester, N.H.

Executives of the Waumbec Mills, Inc., Manchester, N. H., find their Stanley Magic Door Controls pay for themselves in two important ways.

Stanley Magic Door Controls act to seal in humidified air, keep room temperatures at desired levels. Doors open on approach, stay open until passage is clear, then close automatically.

They increase operating efficiency, lower operating costs. Use these check-points to benefit from Waumbec Mills' experience:

- **Maintenance.** Don't "bang" doors open. It costs plenty in repair bills, high replacement costs.
- **Time and Effort.** It takes man-hours to pull and tug at heavy plant doors. Magic Door Controls move traffic without wasted motion.
- **Labor Relations.** Cement and improve good employee relations with Magic Door Controls. Magic Door users find they step-up production, cut absenteeism. Whether your present doors swing, fold or slide, Stanley Magic Door Controls will expedite work flow in your mill.

Regular Stanley Magic Door operator with pull cord control, handling two-way traffic through an "in" and "out" door, using existing air supply and existing door can be purchased for as little as $347.25 for openings up to 60" and $367.50 for openings up to 84". Send for full information today.

Representatives in Principal Cities

THE STANLEY WORKS, Magic Door Division
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☐ Please send full information on Stanley Magic Door Controls.

☐ Call when in area.

Company Name _____

My Name _____

Address _____

City _____ Zone _____ State _____

STANLEY TOOLS • STANLEY HARDWARE • STANLEY ELECTRIC TOOLS • STANLEY STEEL STRAPPING • STANLEY STEEL

Cleaning by Air

(Continued from page 135)

when processed through standard opening and cleaning equipment in the mill.

Such information seems so significant to us that we are redoubling our efforts to eliminate elaborate gin-cleaning setups and replace them with more efficient, simple systems.

Jets in Tandem Give Good Results

Last year we developed our tandem arrangement: opener, Super Jet cleaner, condenser, opener, Super Jet cleaner, and condenser. This arrangement is proving very successful. In every case the second cleaner on the line has a greater efficiency than the first.

Results from one mill are summarized in the accompanying table.

The improved efficiency of the second cleaner in the tandem arrangements has naturally aroused our interest in tandem arrangements using more than two cleaners. We have run tests on as many as four openers and cleaners, and the results were somewhat encouraging. However, in some of these tests on cotton that had been elaborately cleaned at the gin, the fourth opener seemed to go beyond the upward break in the nep-count curve. We are playing with an idea of assuming that the stock is properly opened after the second opener, in which case the cotton would be delivered directly from one cleaner to the next without the opener and condenser between them.

New Shirley Opener

(Continued from page 129)

through the opener increased openness from 0 to 87.3%, but feeding cotton that was 93.5% open increased the openness to only 97.3%. These results prove that repetitive action is largely ineffective and follows the law of diminishing returns. To insure 100% opening, a low-production machine with a different and extremely fine opening action is necessary—the card or the comb.

These Factors Affect Cleaning

The factors affecting cleaning are: (1) the degree of openness of the cotton projected into the air stream around the beater, (2) the air speed and beater speed, and (3) the shape of the separation edge.

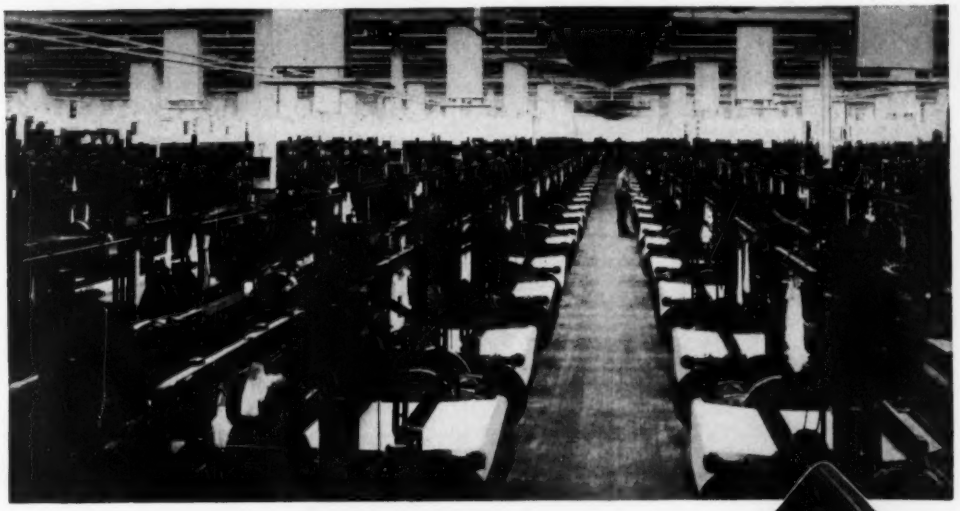
1. Degree of openness

In the conventional method of cleaning, tufts of cotton are struck from the feed fringe by the beater and raked over grid bars before being shot towards the cages. Apart from the fact that the degree of opening usually attained is not sufficient to enable much cleaning to be done, best use is not made of the opening that is achieved. Control over the rejection of trash is far from satisfactory, and many trash particles knocked out are actually sucked back into the stock. It is not surprising that opinions vary widely as to how the grid bars should be set.

A very high degree of openness is achieved on the Shirley opener. This

HEIM *Unibal* SWEEPSTICK

The demand for the Heim Unibal Sweepstick has been growing steadily. Now, in its fourth year of production, repeat orders from mill owners, who have proven conclusively through actual performance records that this is a real money saver and a great improvement in smooth operation, indicate its true value.



The Heim Sweepstick incorporates such entirely new and revolutionary principles that one can't help but wonder how the old sweepstick, which gave such an uneven pick action and had a tendency to enlarge its stud hole through constant wear, could have remained unimproved for so long.

The body member is made of resilient, rubber-bonded fabric, but the unusual feature is the self-aligning Heim spherical bearing with a single ball (hardened, polished, bored, and lapped to fit the stud) which operates in a bronze ball race pressed into, and made an integral part of the body — much like a shoulder socket joint.

The cost is modest, and due to its longer, trouble-free life, it cuts "down time" and production losses to an economical minimum.

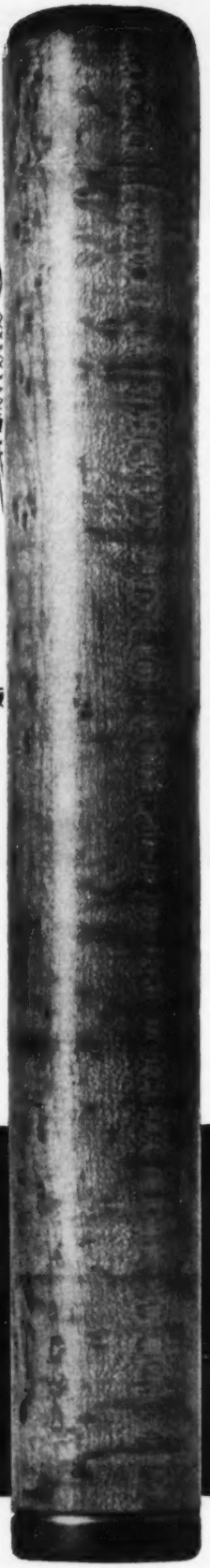
SWEEPSTICK DATA AND PRICES ON REQUEST

THE HEIM COMPANY

FAIRFIELD, CONNECTICUT

We are Licensed to Make

NEW ERA Type WARP BOBBINS For Saco-Lowell SG-1 Spinning Frames



This new bobbin, for top suspension drive, meets all requirements of the new Saco-Lowell SG-1 Spinning Frames — "The only revolutionary development in spinning for more than 100 years."

May We Quote On Your Requirements?

LOWELL SHUTTLE COMPANY

Established 1896 • Incorporated 1914

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SALES REPRESENTATIVES

Hendrik Van Brederode, 311 Godwin Ave., Midland Park, N. J.; W. P. Russell, P. O. Box 778, Atlanta, Ga.; West Philadelphia Supply Co., Emerald and Somerset Streets, Philadelphia, Pa.; E. B. Smith, P. O. Box 3085, Greenville, S. C.

openness gives the trash a chance to be rejected, a chance it cannot have if imprisoned within tufts of unopened cotton. We must do more, however, than give the trash a chance to escape; we must make sure it is rejected and the lint passed on.

2. *Air speed and beater speed*

To obtain separation of the trash from the lint, we make use of their difference in buoyancy in an air stream. Although this difference in buoyancy for some of the trash particles is not very large, separation is assisted by two factors. First, the air stream into which the lint and trash are projected by the beater is a curved, high-speed air stream. There is thus a high centrifugal acceleration acting on the particles to segregate the trash and lint by spreading out their respective paths. Secondly, a "separation edge" and boundary sheet are used to skim off a controlled amount of the loaded air stream.

3. *The separation edge*

All the material passing outside the separation edge is rejected, and all passing inside is delivered. Control over the amount of droppings is obtained by varying the setting of the separation edge to the beater. The droppings are also affected by the length of the "free space," which needs to be carefully chosen, usually just once for the machine. The separation is, of course, not perfect. Some lint is dropped, and some trash is delivered.

The lint loss and cleaning are related mathematically to the free space below the beater and to the setting of the separation edge.

The effect of increasing the beater speed is to increase the air speed near the beater and thus increase the centrifugal acceleration on the particles. This action causes the particle tracks to spread out so that a clearer definition between delivered and rejected material becomes possible. The cleaning efficiency is therefore raised.

The shape of the separation edge is not critical if a fairly sharp edge is used.

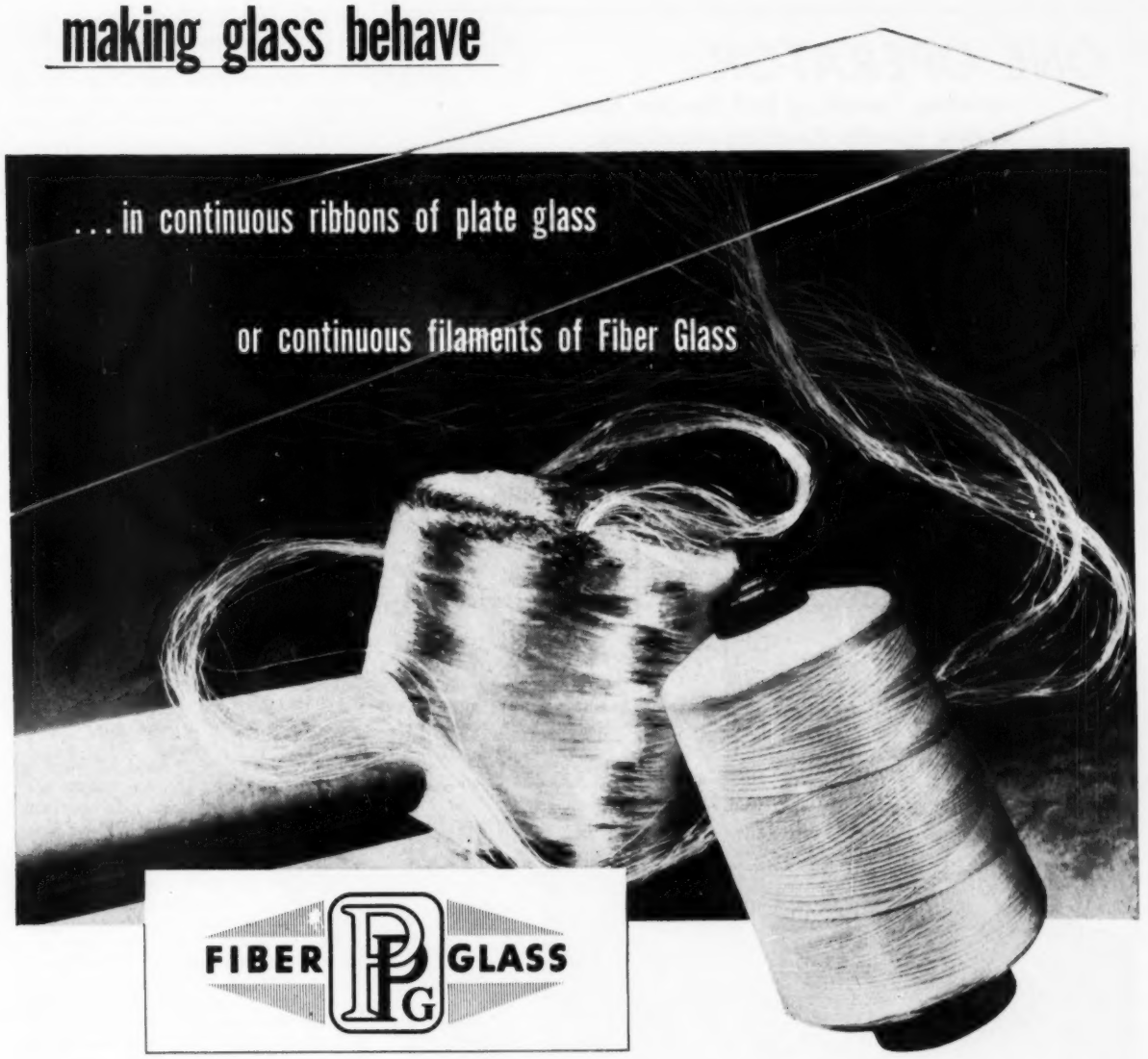
Collection Comes Next

After our material is opened and cleaned, the next job is to deliver it satisfactorily to the next process. Here the important thing is to insure efficient stripping of the beater.

The conventional method of stripping a beater is to use a stripping knife or rail, i.e. to strip by mechanical means. We prefer to strip our beater pneumatically. Again, efficient stripping depends on the correct use and control of air currents, combined with a suitable angle of tooth on the beater. An air speed greater than that dragged around by the beater is desirable to insure effective stripping, and this speed is achieved by combining an adequate total air output of the machine with a divergent boundary sheet that runs below the beater from the separation edge to the bottom cage. A suitable angle of the beater teeth enables the fibers to slide off the teeth freely under the action of centrifugal force.

The close-fitting beater cover used on conventional pickers is not suitable for the conditions on our opener because such a cover leads to the build-up of a high air pressure near the feed system. The much greater volume of air dragged around by

making glass behave



Extremes in utility, extremes in form—and excellent illustrations of the skills acquired by Pittsburgh Plate Glass Company in 70 years of glassmaking.

PPG makes glass behave . . . drawing it into the tiny continuous filaments of gossamer fineness for Fiber Glass just as skillfully as it rolls it into continuous ribbons of plate glass. From raw materials, through all the intricacies of manufacture, PPG Fiber Glass is made to meet the most exacting needs.

If Fiber Glass is used in your products—or if you contemplate its use to replace other materials—investigate the many advantages provided by PPG facilities. Pittsburgh Plate Glass Company, 420 Duquesne Way, Pittsburgh 22, Pa.

You can obtain PPG Fiber Glass in these forms

Superfine Insulation—Extremely light-weight, efficient thermal/acoustical insulation for aircraft, automobiles, household appliances, cold-weather garments, etc. Available with foil and vinyl facings as well as un-faced.

Yarns, Strands and Roving—For industrial and decorative textiles; reinforcement of plastics, paper and rubber; electrical insulations.

PPG field engineers are available to work with you on any applications involving the use of these Fiber Glass products.

FIBER PPG GLASS PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS

PITTSBURGH PLATE GLASS COMPANY

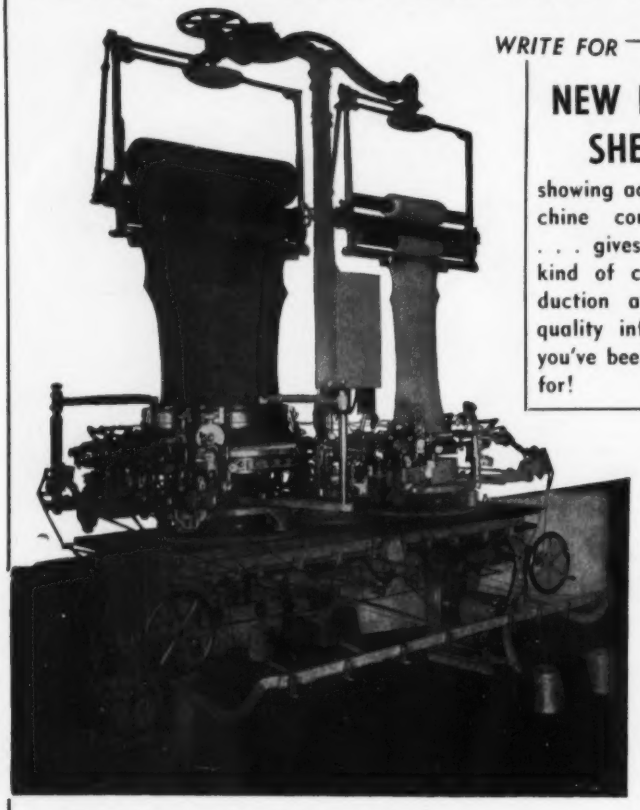
ONE OPERATOR

running Tompkins D-2 Double Head Spring Needle Knitting Machines

WILL TURN OUT TWICE AS MUCH FABRIC

as one operator running Multiple Feed Latch Needle machines with same number of bobbins, plus

PERFECT CLOTH all the way!



WRITE FOR

NEW DATA SHEET

showing actual machine comparisons . . . gives you the kind of cost, production and cloth quality information you've been looking for!

fully modern!
TOMPKINS D-2 DOUBLE HEAD SPRING NEEDLE KNITTING MACHINE

YOU CAN TAKE YOUR CHOICE of lower cost per yard (with less operators) or doubled production with perfect cloth all the way . . . with a maximum versatility of fabrics!

WRITE OR PHONE FOR YOUR COPY of the NEW DATA SHEET which covers such important subjects as Fabric Flexibility; Perfect Rolls of Cloth; Needle Breakage Reduced One-Half; and Needle Savings!

SEE THE TOMPKINS D-2 IN PRODUCTION ON WHATEVER YARN OR FABRIC YOU WISH . . . SEE FOR YOURSELF HOW THE NEW SPEED AND NEW ECONOMY OF THIS MACHINE WILL ENABLE YOU TO COIN NEW PROFITS FOR YOUR MILL

TOMPKINS BROS. CO.

ESTABLISHED 1846

629 Oneida St. • Syracuse 4, N. Y.

the beater and the effective seal produced by the stock being fed to the machine produce this build-up. This high pressure, which has undesirable effects, is avoided by the use of our low-pressure cover. Pneumatic stripping of a beater with this cover is highly efficient.

How the Opener Fits in a Line

We formerly used the opener as a separate machine—as a picker with a four-lap feed—but we abandoned the idea of a separate machine for two reasons. First, when a picker was attached directly to the opener, the very open state of the material made lap formation more critical. Second, we considered the usefulness of the machine to the industry to be vastly improved by making it as a unit that could be fitted into an existing opening line; so this is the form the Shirley opener now takes.

Usually, for straight cotton spinning, a hopper feeder, conventional beater, and picker follow the opener. This arrangement insures that lap formation is entirely satisfactory, and it also enables us to take advantage of the very open state of the material to remove as much dust as possible. We run the delivery cages at high speed so that only a thin film of opened cotton is drawn into them and dust has ample opportunity of being sucked through the perforations of the cages. Delivery to the next process is in the form of loose cotton.

The machine can be used for opening and cleaning at the gin, for straight cottons, for waste, for bleached, absorbent cotton, and for synthetics.

At the Gin

The need for such a machine at the ginning process is emphasized by the increasing use of mechanical harvesting of cotton. It seems to me that there is a risk of more trash than ever being shipped across the Atlantic in cotton bales in the future. Also it does seem rather senseless to press this trash as tight as possible in high-density bales for us poor spinners to have to get it out again. Adaptation of the machine for use at the gin should not be a difficult task.

For Straight Cottons

For regular cotton spinning, we have given the machine a thorough trial in mills and it has done all that was asked of it. Cleaner laps, less dust, better bloom, cleaner card strips, less trash dropped on frames all along the line—these are the main advantages. So far we have only processed American and American-type cottons in the mills. We are following up with long-staple Egyptian cottons.

For Wastes

The opener deals with all kinds of wastes, provided the staple is not too long. We had a prototype in a waste mill for several months that handled all types of cotton waste and consistently achieved over 60% cleaning. Regular mill machinery, for the same lint loss, gave as low as 20% cleaning for some types of waste.

For Absorbent Cotton

For absorbent cotton and rayon, the

How does U. S. Rubber make quills water-resistant?

Here's how: By making them of Uscolite, the remarkable new rubber-plastic compound. Quills made of this wonderful material not only are resistant to water, but they retain their shape throughout their entire service life. They last two to three times longer than wooden quills.

Not only that, but Uscolite quills do not chip or splinter, nor do they soften at the tip when run through conditioning agents. They have high-surface friction, which means excellent holding properties which eliminate or minimize sluffing of the yarn.

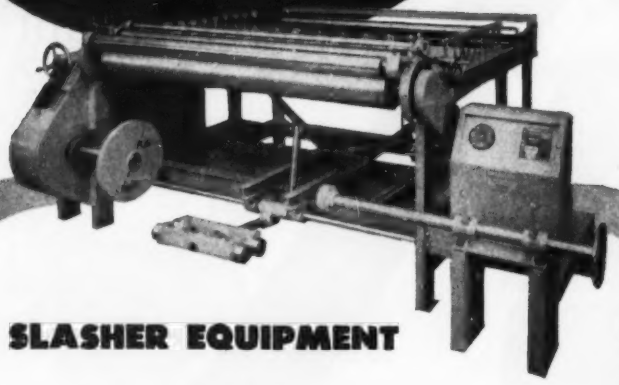
Like every other product in the complete line of United States Rubber Company's textile mill specialties—all the way from warp tubes to cop butts, Uscolite quills *last longer* and permit a *higher quality* of textile output. Write for more information today.

PRODUCT OF U.S.RUBBER SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY

MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

INVESTIGATE
Tower
TEXTILE EQUIPMENT



SLASHER EQUIPMENT

High speed production is the keynote of Tower Slasher Equipment. Warp sizing costs are reduced. Uniformity in both the sizing of yarn and the winding of loom beams is assured by these modern TOWER units. Advanced size box designs and complete instrumentation give quality control at all speeds. Turned and polished rolls, anti-friction bearings throughout and welded steel frames maintain perfect alignment at continuous high speed operation. Multi-motor drive precisely controls tension and stretch from creel to loom beam.

Southern Representative
IRA L. GRIFFIN AND SON
P. O. BOX 1576
CHARLOTTE, NORTH CAROLINA

Northern and Canadian Representative
LINDER AND COMPANY, INC.
296 NORTH BEACON STREET
BOSTON, MASSACHUSETTS

Tower Iron Works

Established 1835
50 BORDEN STREET, PROVIDENCE 3, RHODE ISLAND

machine has interesting possibilities. It cannot achieve the openness of a card web, but it goes far in that direction.

For Synthetics

We have as yet put through only 1½-in., 3-den. nylon. For this material, the opener did a first-rate job of opening, and we feel confident that it has a future in that field.

Pointers for Supervisors

(*Continued from page* 147)

employees and not on others, or enforced at some times and not at others, the foreman actually fosters the development of poor attitudes among employees. They may decide that the violation of certain rules is an accepted practice in the department. They may feel that the foreman sanctions violations. In this situation the attempt to enforce the rules leads to further dissatisfaction.

Finally, the employees want to be informed about those things that concern them. And they would like the opportunity to have their say in certain matters. If things cannot be done the way they want them done, they would like to know the reasons. In most cases they want this information from the foreman; he's the member of management they know best.

In summary, employees want a foreman to be available, approachable, understanding, respectful, helpful, informative, impartial, and consistent. It's a very big order.

Avondale Corduroy

(*Continued from page* 117)

They have their own loomfixer's manual, and each loomfixer is supplied with a copy. Loomfixers use gauges to set most loom motions to close tolerances. Each loomfixer services one-third of his looms by checking and keeping the shuttles in good condition and by checking the looms motion by motion for worn parts.

Looms Are Kept in Good Condition

Looms are checked completely when warps are out. Worn parts such as pickers and binder leathers are replaced, and the loom bolts are tightened.

The weave room is equipped with 250 XP looms, 46-in. wide. All looms have dobbies. The loom speed is 155 ppm.

Weavers run 42 looms, and a loomfixer's section is 84 looms. This job arrangement is ideal in that each loomfixer has only two weavers, and

Vicara® ZEIN FIBER loves everybody!

You heard us! Sure-as-spinning, *Vicara* is wild about wool, nuts about nylon, coos over cotton, raves about rayon, "oohs" and "ahs" over ORLON[1] and ACRILAN[2], thinks DACRON[3] and Dynel are simply divine!

Vicara loves every fiber—because *Vicara* blends with any fiber to make a better fabric. *Vicara* is the fiber that improves the blend—any blend and every blend.

Maybe you've got a blend on *your* brain—a blend that's got possibilities, but's missing something. Something like luxurious softness or moisture absorption. Or maybe the wrinkles won't hang out.

If this is sad but true, then *Vicara* is the baby for your blend! In addition to soft luxury and glorious comfort, *Vicara* is completely washable, resists moths and mildew—and possesses the rare ability among man-made fibers to dissipate static.

Vicara has an impressive collection of Success Stories—in shirts, dresses and suits, blankets, socks and sportswear. It's too bad that there's not more *Vicara*—because *Vicara* loves everybody and has so much to contribute to every blend!

1. DuPont's trademark for its acrylic fiber.
2. Chemstrand's trademark for its acrylic fiber.
3. DuPont's trademark for its polyester fiber.

Vicara®

THE FIBER THAT IMPROVES THE BLEND

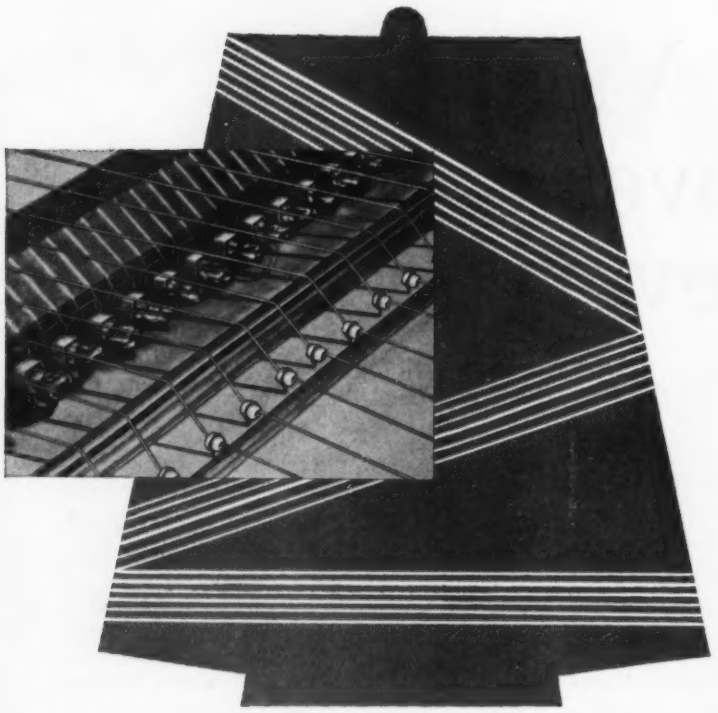
UNIFORMITY • BEAUTY • VERSATILITY • ECONOMY • EASE IN USE • SPINNABILITY
DYE-ABILITY • WARMTH • HANDLE, FEEL AND DRAPE • ELASTICITY • RESILIENCE
ABSORBENCY • HEAT RESISTANCE • WASHABILITY • NON-FELTING • NON-ITCHING
NO ODOR • NO KNOWN ALLERGIES • MOTH RESISTANCE • MILDEW RESISTANCE

Fiber Division • Virginia-Carolina Chemical Corporation • 500 Fifth Avenue, New York 36, N.Y.

Mc BRIDE

CREELS FOR EVERY PURPOSE

WARP BEAMS
FLANGES
ROLLS



INSTANT ACTION STOP MOTION FOR LIGHT YARNS

New super sensitive electro-magnetic stop motion featuring sealed mercury switches developed to give instant action with minimum tension for extremely light yarns such as 15 denier Nylon.

Mc BRIDE

EDWARD J. McBRIDE COMPANY, INC.
COTTMAN AVE. & WISSINOMING ST., PHILADELPHIA 35, PENNSYLVANIA

no loomfixer's or weaver's job is split.

Warp yarns are made from 1-in. Middling cotton spun from single-creel roving.

The cloth construction is 80 ends and from 140 to 160 picks per in. All styles are woven on six harnesses with auxiliary tape-selvage harnesses.

Four-bank electric stop motions and selvage temples are used on all looms.

Cloth Inspection Keeps Seconds Low

Seconds are controlled closely because the weave-room foreman and assistant foremen check the cloth and looms frequently. Cloth is graded right in the weave room so that second-quality cloth can be shown to the foremen, loomfixers, and weavers quickly.

Cloth inspection at the loom is the most important part of quality control in the weave room. All rolls of cloth are run up to 600 yd. in length when possible so that the operator of the machine that cuts the pile will not have to reset the guides so often. If cloth isn't inspected closely at the loom on these large rolls, a lot of seconds can be made before cloth is inspected by the grader.

Weavers inspect their cloth twice each shift with a flashlight. Smash hands inspect one set of looms each shift. Since there's a smash hand on each shift, all looms are inspected by smash hands every 48 hr.

The weaving foreman keeps a record of each roll of seconds. The record shows the number of defects in the roll of cloth and the type of defect. Two rolls of seconds from the same loom seldom occur because the loom is checked so thoroughly when the first roll of seconds is made.

Do Your Shuttles Last 10,000 Hr.?

Only 150 shuttles are used per year on the 250 looms at the Catherine plant. The average shuttle life is 10,000 hr.

The loomfixers check their shuttles once each week on one-third of their section. The shuttles are checked for washboard marks and for marks caused by pickers out of parallel, shuttle feelers working improperly, and for any misalignment of lay parts.

The weave-room foreman and the assistant foremen check the shuttles once each month.

When a new shuttle is placed in a loom, the loomfixer checks the loom by a check card and signs the card. Two days later the assistant foreman rechecks the loom to see that the shuttle isn't being damaged.

The check card includes checking the rocker shaft, crankarms, parallel motion, picker-stick power, protector

For more information, write direct or use Reader Service post card.

How Quill Winders are Tension Controlled at the Schneider Mill

Over 500 leading textile mills depend on Kidde Compensators to take the guesswork out of tension control. Kidde Compensators are precision instruments made of the most modern non-corrosive materials. They're a cinch to set, and automatically compensate for a change in the coefficient of friction as well as back drag. If you use quill winders on any kind of synthetic yarn, count on Kidde Compensators to (1) assure uniform tension throughout the quill; (2) control tension at bunch; (3) prevent sloughing off due to soft quills; (4) relieve yarn tension at *start* of bunch, thereby promoting longer quill life. Write today for full information.

Kidde

Walter Kidde & Company, Inc.

591 Main Street, Belleville 9, N. J.

For more information, write direct or use Reader Service post card.

How to care for

Touchy Textiles

HYDRO-SHEAVE Drive

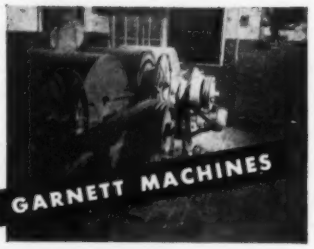
Today, in thousands of touchy textile industry applications, Twin Disc Hydraulic Drives are providing the smoother, cushioned power flow that permits vastly increased production efficiency. From fragile wisps of fiber to finished products—gentle mechanical handling is vital to volume, quality production.

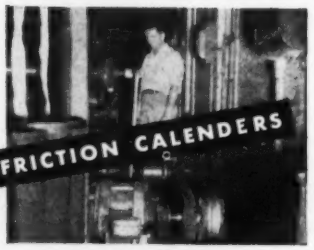
The elimination of hard, solid connections between motors and driven equipment means that loads are picked up softly, smoothly, preventing downtime—producing higher quality—prolonging the useful life of valuable machinery.

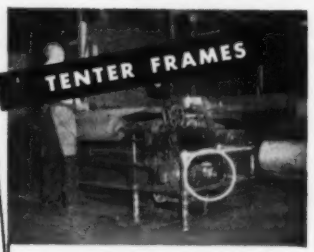
Twin Disc Hydraulic Drives are easing damaging power shocks in the *five* operations shown at left and in many other textile applications, including:

Embossing Padders • Twisters • Breaker Cards • Finisher Cards • Rubber Covering Machines • Braided Covering Machines • Winding Machines • Reversing Aprons • Re-Winds • Conveyors • Extruder Tightening Devices • Stoker Feeders.

For Bulletins—Twin Disc Hydraulic Couplings (Bulletin 144-C), HYDRO-SHEAVE® Drives (Bulletin 145-B), and HYDRO-WYND® Drives (Bulletin 163)—and data sheets describing many textile applications, call your nearest Twin Disc Hydraulic Dealer, or write . . .







TWIN DISC
CLUTCHES AND HYDRAULIC DRIVES

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois

BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TULSA

motion, loom brakes, squareness of the lay and reed, race plate, box-back alignment, binders, harness timing, picking-shaft stop, and the picker-stick bumpers.

At Avondale's Catherine plant, everyone is ahead of the job, which means high loom efficiency, first-quality cloth, and pleasant working conditions.

Exploring the Community

(*Continued from page 145*)

Booklets Are Available To All Industry

"A Better Life for You" and other booklets of the series were prepared by Bemis for its own use and for any other industrial firm that cares to distribute it. Bemis believed that many smaller firms needed such a booklet but could not include one in their industrial-relations financing program.

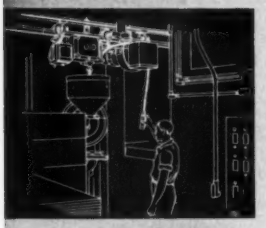
The next step in the Bemis program was to inform industry that the cartoon booklet could be obtained in any quantity. It may be distributed under the company's own imprint. Bemis makes it plain that it does not sell the booklet. Sales are handled by the publishers, who have established a range of prices at a minimum suitable for any small or large plant budget.

Suggestions were sent out to some 35,000 key people, who were urged to stimulate interest in the booklet. Speeches before civic clubs, Chambers of Commerce, schools, colleges, and adult-education groups were listed as means of increasing public interest in educational comic books. Bemis ran full-page ads in national magazines to describe the booklet and its availability.

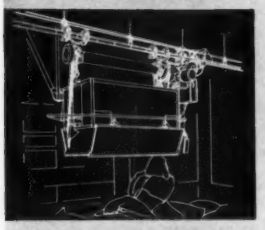
Comics Have Won Awards

Bemis has received national recognition for its cartoon-booklet program. The Freedoms Foundation and the American Heritage Foundation have presented the company and its publisher with major awards citing one of the booklets' effectiveness in the get-out-and-vote campaign of 1952.

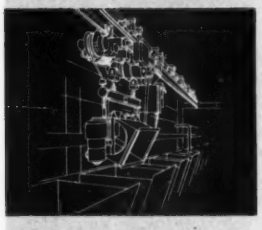
In five more years, Bemis will celebrate its 100th anniversary. Now, it is pointing the way for other industries and other companies by making available to them the series of cartoon discussions of matters that can have great impact on America's destiny. "A Better Life for You" could mean a better life for all who live in textile communities.



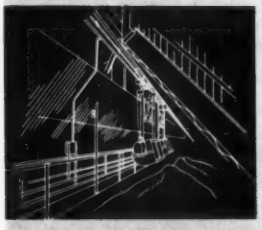
Dispatch to multiple stations



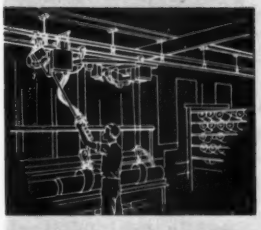
Delivery to fixed stations



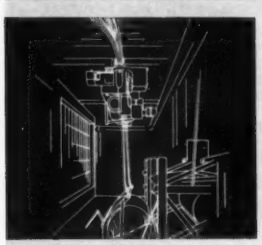
Delivery to multiple stations



Delivery to movable stations

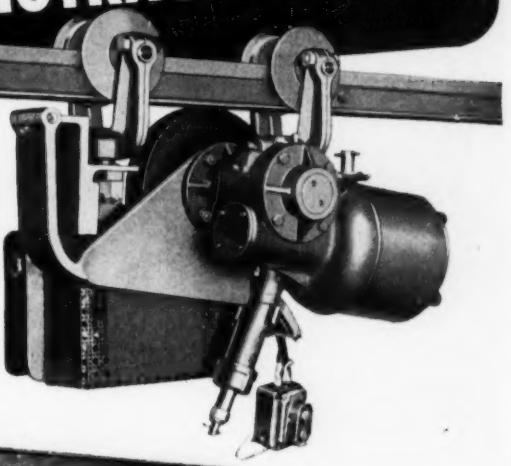


Selective dispatch between multiple stations

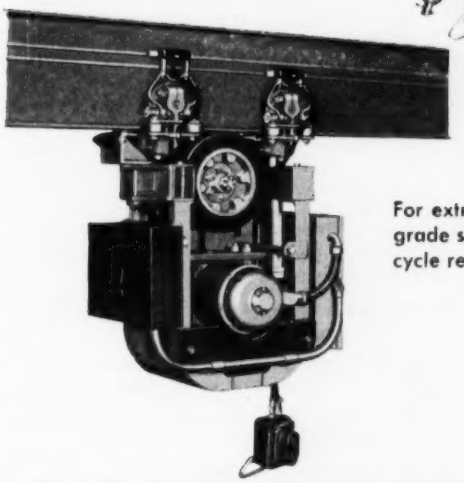


Load and delivery to multiple stations

2 New AMERICAN MONORAIL MONOTRACTORS



For low cost propulsion of a 1-ton hoist or carrier.



For extremely heavy-grade speed or duty-cycle requirements.

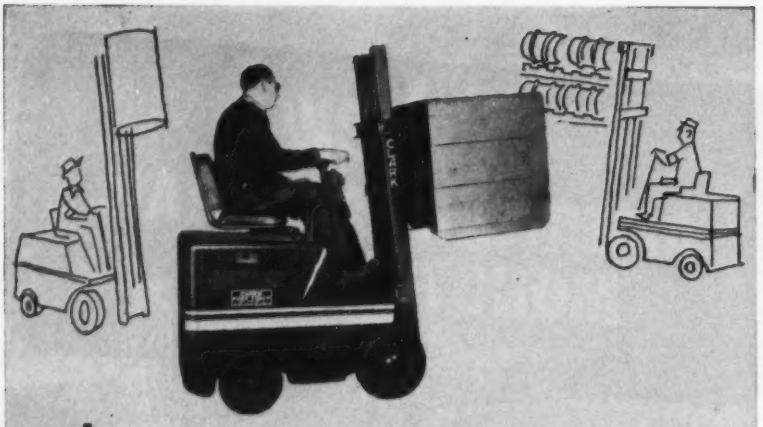
To propel heavy loads or automatic carriers on overhead monorail systems, here are two new American MonoRail MonoTractors. Through the application of simple electrical and mechanical devices, American MonoTractor Units perform a wide variety of automatic handling operations.

While unique in many features, such systems are built mainly from standard units. MonoTractors can be applied to carriers operating on any smooth bottom track. An American MonoRail Engineer is available for consultation in every important industrial area.

SEND FOR BULLETIN AD-1

THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE **CLEVELAND 7, OHIO**



WHICH POWER TYPE IS BEST FOR YOU?

...electric, gas, diesel or L.P. gas?

No two jobs are exactly alike, so there's no such thing as one "best" power type. Which type is best *for you*?—that's the important question. The only person who can give a really *unbiased* answer is one who knows them all, and knows where they fit.

That's your local CLARK Dealer. He carries electric, gas, diesel and L. P. gas units—and he's got no ax to grind for any one. His object is to provide the one that's best for you. For example, careful application analysis often proves that *electric* trucks are best for certain jobs because of these advantages:

★ **Economical operation on low-cost electric power**

★ **Long life, less maintenance—electrics have fewer, simpler moving parts**

★ **Smooth, vibration-free handling of fragile loads, less wear on truck**

★ **Quiet, clean operation**

Which power type is right for you? No matter what it is, you'll find it in the CLARK line of quality handling equipment. You'll always be right when you buy from CLARK.

1903 1953 CLARK EQUIPMENT

WHEN THE ANSWER IS *Electric* CLARK ELECTRICS ARE THE ANSWER
...Here's why:

1 Better battery efficiency—users report *more work* per amp-hour with CLARK.

2 Greater stability—safer for load, safer for operator.

3 Faster acceleration, greater speed—gets more work done, covers more ground.

4 Safer, smoother stops—with CLARK's positive-controlled, reverse torque braking.

5 "Application-engineered"—for special requirements, CLARK provides custom engineering.

CLARK ELECTRIC, GAS, DIESEL, L.P. GAS **FORK TRUCKS**
AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 27, MICHIGAN

Please send: ☐ Condensed Catalog ☐ Driver Training Movie
☐ Have Representative Call

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City_____ Zone_____ State_____

AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

Stabilization of Rayon

(*Continued from page 123*)

after 50 launderings there is no progressive increase in the dimensional change figure. Second, and equally as important, is its nonchlorine-retention feature. Fabrics that retain chlorine are damaged in the ironing process: the heat of the iron causes the retained chlorine to yellow and to weaken the yarn. Aquex-finished fabrics have no affinity for chlorine; hence there is no yellowing of white fabrics or any fabric damage due to ironing. Third, the increased resistance to abrasive wear is important. The conventional resins are brittle, and flexing of the fabric in wear or in washing breaks the brittle resin; thus the fabric develops a built-in abrader that causes fabric damage and tendering.

To sum up the desirable features of an Aquex-finished fabric, you have a low and permanent residual shrinkage, a nonchlorine retentive finish, and a greatly improved wear life. If rayon fabric is dyed with standard fast dyes and Aquex finished, it may be labeled "Wash any way you like." No ifs or buts about it, the fabric is washable and without apology.

Avcoset

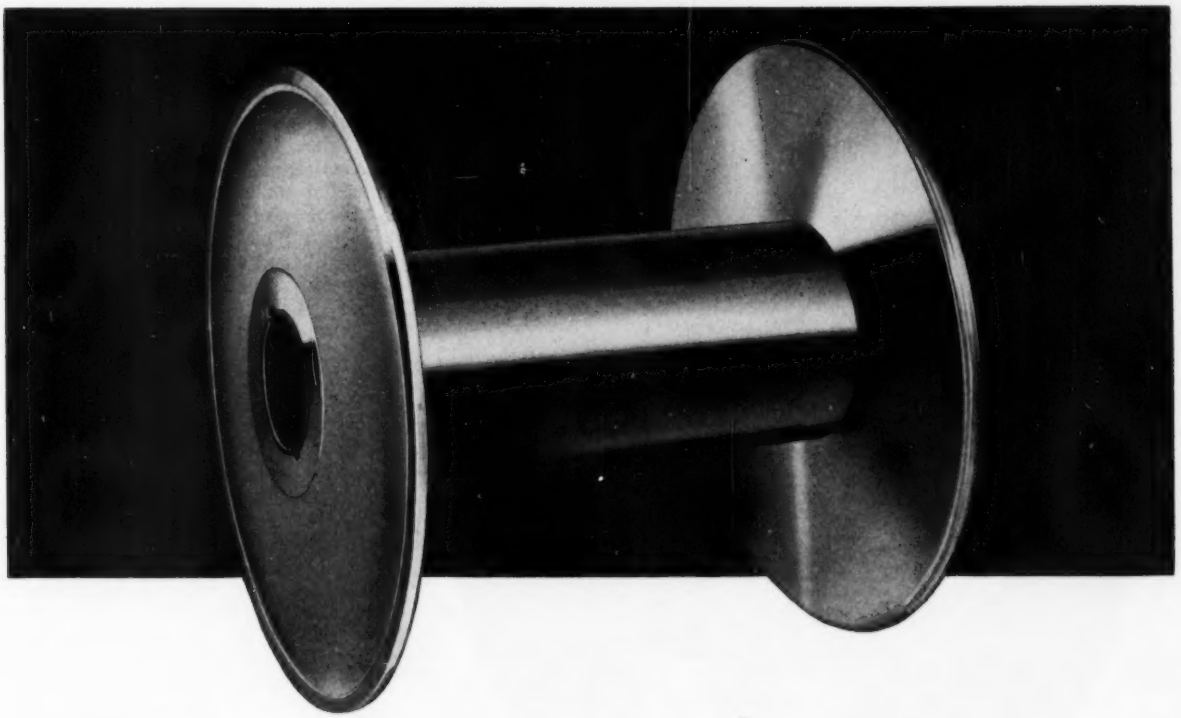
Avcoset is the trade mark of American Viscose Corp. for its cellulose ethers, and it is also the trade mark for fabrics treated in accordance with this new process for stabilization of fabrics containing rayon alone or in blends with other fibers. This means that Avcoset is a stabilization process and is also a program for stabilized rayon fabrics.

Fabrics finished with Avcoset are said to have excellent dimensional stability to washing—a residual shrinkage of 2% or less. This test is made according to CCC-T 191a—cotton test procedure—with temperature at 212° F. Fabrics subjected to as many as 50 such launderings show little or no progressive shrinkage.

A typical chemical formula for a 96-gal. volume:

Avcoset WS	40 lb.
Formaldehyde (37%)	80 lb.
Avcosol 104	4 lb.
Sodium bisulfate	16 lb.
Sodium sulfate	4 lb.

The preparation requires accuracy in handling. Water is added to the Avcoset WS to an adjustment of 50 gal., with constant stirring. Next the formaldehyde is added, and then the softener is stirred into the mix. More water is added to bring the volume up to 80 gal.; then the sodium bisulfate and sodium sulfate are



TOP production
LOW maintenance cost
LONG life

with HAYES heavy duty, light metal tricot nylon beams

Under the higher pressures required for Nylon, the new threaded type nylon beams will last practically forever, because of the stronger aluminum alloy used in their manufacture. Shaft bearings and keyways are reinforced by malleable iron inserts. Because of their special design and the unique type of light metal alloy used, these Hayes beams will give you top production without interruption and require practically no maintenance. They can be furnished with regular heavy duty 3/8" wall barrel or extra heavy duty 1/2" wall barrel thickness.

Catalog of our material and brochure covering our manufacturing facilities furnished on request.

HELPS TO CUT YOUR COST —Hayes long experience in machining and finishing light metals, makes these heavy duty, light metal tricot nylon beams smooth running, snag free — reducing your waste and assuring you increased production. Smooth, uninterrupted top production, low maintenance and extremely long life help you cut costs and produce better cloth with Hayes Heavy Duty, Light Metal Tricot Nylon Beams.

HAYES *The World's Largest Producer of Light Metal Beams*

INDUSTRIES, INC., **HOME OFFICE: Jackson, Michigan**

EASTERN REPRESENTATIVE
J. Paul Laird
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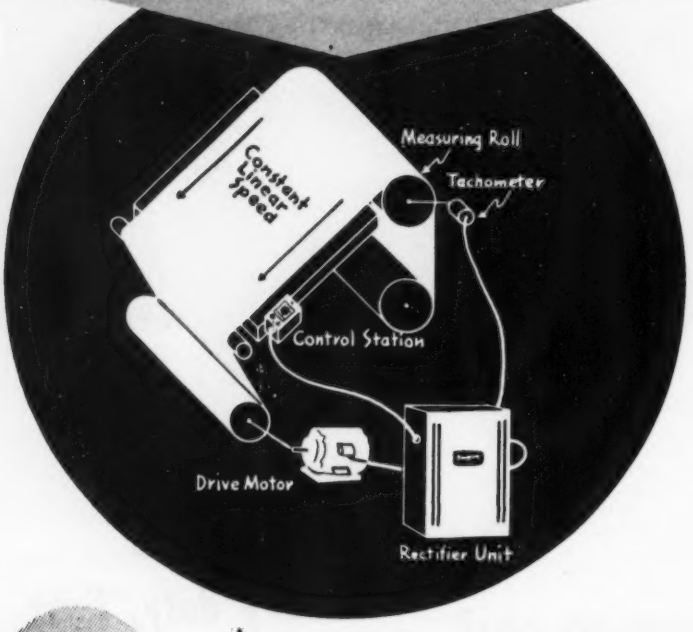
Montreal, Canada

For more information, write direct or use Reader Service post card.

Servospeed
Constant
Speed Winder



Here's HOW IT WORKS

. . . for Textile Inspection Tables and other constant surface speed applications

A small precision tachometer generator is used to sense a minute change in material surface speed so that the motor speed changes to restore or hold preset selected surface speed. Thus a constant linear feet per minute of material speed is achieved even though the radius of the windup roll increases with each turn to otherwise increase the linear speed versus radius buildup. The surface speed is now maintained constant by automatically reducing core speed. Optimum inspection speed may now be used for the entire inspection period with built in acceleration control preventing tension extremes at start of period.
Available for inspection tables in ¾ horsepower models for 220, 440 or 550 volt 60 cycle operation.

Other models of electronic motor speed control systems available from 1/50th to 3 horsepower.

Servospeed
DIV. of ELECTRO DEVICES, Inc.
4 Godwin Ave. Paterson, N. J.

stirred in. Volume is now adjusted to 96 gal., and the mix is ready for straining into the pad box. Softener and Avcoset content may be varied to adjust hand and bulk of the fabric.

The finishing-plant routing of Avcoset, as with Aquex, is the same as the conventional resin-application process, and the same type of equipment is used. Fabric is padded, frame dried, cured at a temperature of 330° F. for 2½ min., or for 5 min. at 315° F. Washing and neutralization with soda ash and a detergent is a must, after which the fabric should be dried in a relaxed manner on an overfeed pin tenter or festoon-type dryer. The final framing, too, should be as relaxed as physically possible.

The Avcoset treatment does not lend itself to cotton applications. Reduction in tensile strength by about 35% occurs when cotton is so treated.

Less than one per cent of weight is added to the fabric by the Avcoset process. The fabrics are easier to iron and will retain their well-pressed appearance much longer than untreated fabrics; garments so treated, when subjected to normal wear, will stay clean longer than untreated fabrics.

X-2

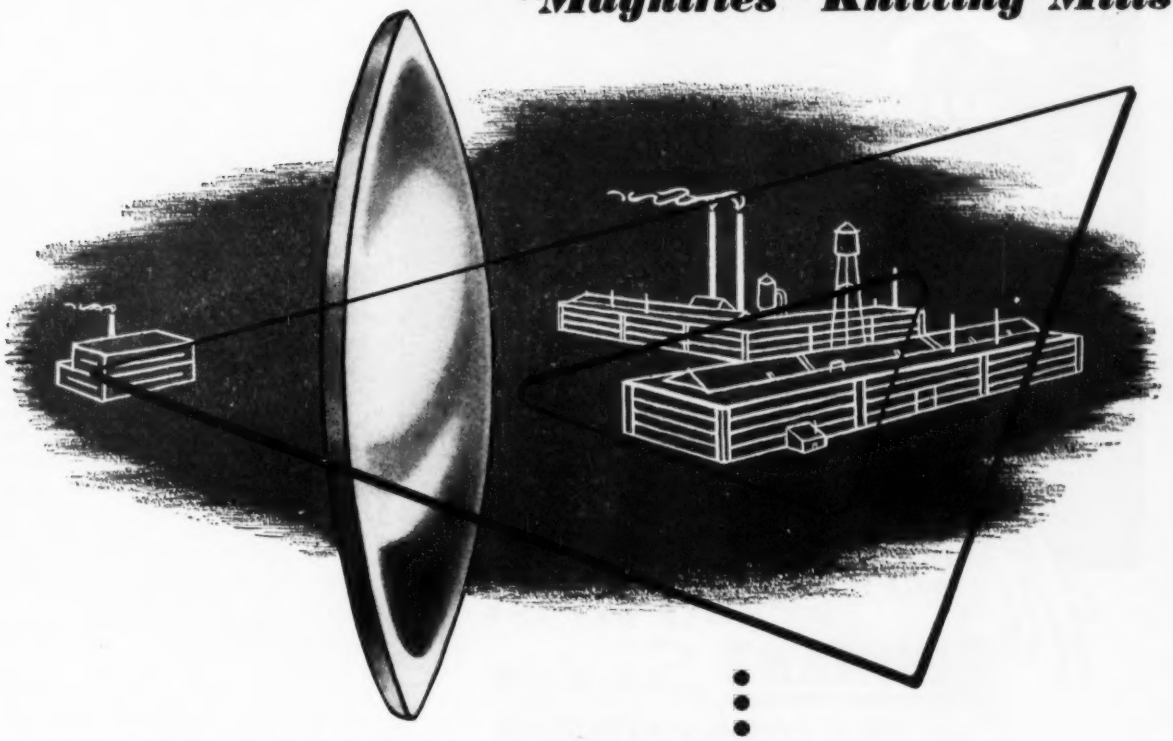
Dan River Mills' X-2 chemical for rayon and rayon blends is the result of about 10 years of continuous research by Dan River Mills laboratories. This study included all the known finishes now on the market as well as all those of Dan River's origination. X-2 is an entirely new textile finishing chemical. It is not a resin and is in no way related or comparable to the conventional resins now used for impregnating rayons. The chemical composition of X-2 has not been revealed.

X-2 contributes to rayon and rayon blends the properties of complete and permanent washability as a result of the elimination of shrinking or stretching. Because it is nonchlorine retentive and because no brittle finishing material is added to the fabric, the wear life is greatly prolonged. X-2-treated fabrics are more resistant to soiling and the retention of perspiration odors than untreated fabrics or fabrics treated with conventional resins. All types of fabrics tested show a shrinkage under 2%, and in repeated launderings there is scarcely any additional shrinkage.

Dan River Mills' records reveal a wear life of at least double that of conventionally finished fabrics, because in the X-2 rayon and rayon-blend fabrics there are no brittle resins or other substances to increase abrasion. The cross-links of X-2 that fix and stabilize the rayon fiber are

HOW SUPREME ENGINEERING

"Magnifies" Knitting Mills



Without adding one inch of actual floor space, Supreme's engineering makes knitting mills bigger in output capacity . . . bigger in production versatility . . . bigger in profit-knitting power.

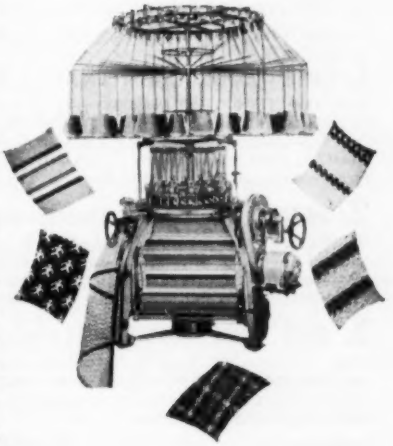
How? Supreme does this by creating knitting machines that *multiply* a mill's *knitting-ability*.

Look into the modern Supreme line. In model after model you'll find multi-machine fabric versatility and production rates that "magnify" a knitting mill in its customers eyes.

You'll also see the basic construction features that assure long-lived, low-maintenance operation. These standardized features give all Supreme's a family resemblance that simplifies life for your knitter-mechanics.

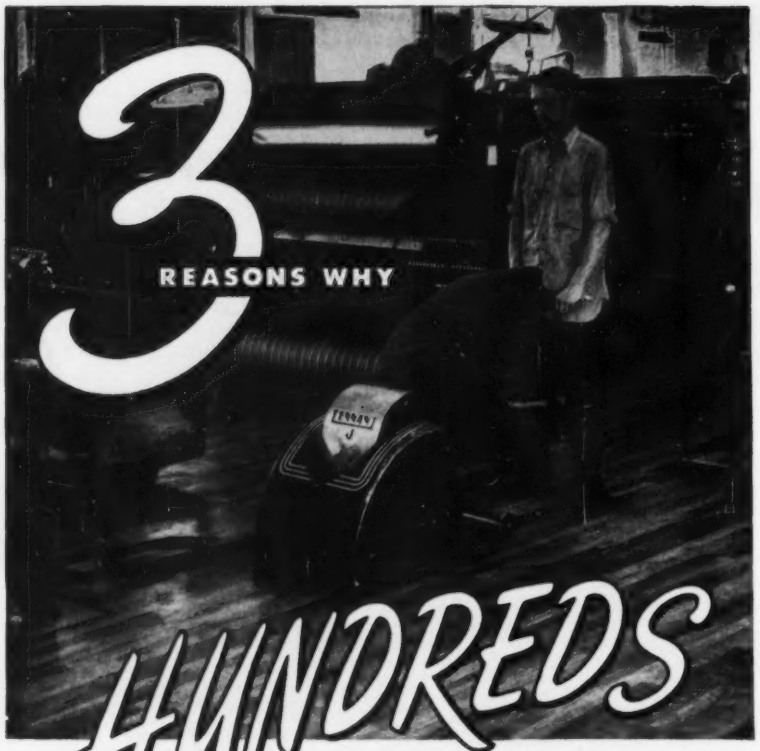
Write, wire or phone today for complete information on any of the Supreme's shown on this page.

SUPREME
KNITTING MACHINE CO., INC.
107 JOHNSON AVE., BROOKLYN 6, N. Y.
Southern Representative and Showroom:
The Malluck Co., 711 S. Tryon St., Charlotte, N. C.



For example—Here's Model LT/SAAF "A ONE-MACHINE KNITTING MILL"—This automatic variable striper and pattern placer machine knits a tremendous variety of Terry and Jersey fabrics at terrific production rates. Switches easily from one to the other.

SK-162



OF MILLS USE THE
TENNANT *System*
OF FLOOR MAINTENANCE

Its cost-saving performance and ease of use have established TENNANT as *THE accepted floor maintenance system of the U.S. textile industry.* This unique acceptance is due to these practical advantages . . .

1. CUTS FLOOR MAINTENANCE COSTS

You save 4 ways—in *manhours,* by cleaning faster in one operation with 1 man; you cut *accident costs* by DRY-cleaning (no wet, slick floors). You avoid needless *floor repair costs* . . . and reduce *stock losses* from snags, splinters and soilage.

2. EASIEST TO USE: eliminates scrubbing!

Works like magic! You get rid of dark, rough, oil-soaked fibers . . . and have a smooth, bright, *hardened* floor surface that resists dirt. Stays clean longer! Ends costly, harmful scrubbing and wet-mopping.

3. FITS YOUR MILL'S SPECIFIC NEEDS

Your TENNANT System is individually selected and planned, 100% *specialized* for your mill. Assures you of best results. Personal installation and periodic inspection . . . *without charge.*

ONLY DAILY CARE needed is fast, low cost sweeping. Oil, dirt and dust do not cling to the smooth, hard surface of a **Tennantized** floor. Dirt sweeps off easily . . . Keeps your floor bright and attractive.

OFFICES IN PRINCIPAL CITIES

G. H. TENNANT CO.
2586 No. 2nd Street
Minneapolis 11, Minn.

TENNANT Established 1870

Write Today!
Get helpful case histories, illustrated bulletins, etc. Learn HOW YOUR MILL CAN SAVE ON MAINTENANCE COSTS . . with the Tennant System.

FLOOR MAINTENANCE SYSTEM
Creators of the TENNANT SYSTEM OF FLOOR MAINTENANCE—Manufacturers of Equipment & Materials for MAINTENANCE OF FLOORS, DECKS, ROOFS, HIGHWAYS

tough and resilient and are not broken either in wear or in washing. The links remain intact and thus help the fibers to resist wear and tear and the effects of washing, according to Dan River Mills' claims.

X-2 rayon and rayon-blend fabrics do not retain chlorine. White rayon fabrics are practical and may be washed like cotton fabrics. There is little likelihood that perspiration odors will develop in X-2 rayon and rayon-blend fabrics. There is no internal breakdown in X-2 rayon fabrics and perspiration is unable to swell the fibers. Whatever perspiration there may be on the surface of the fibers is accessible to the air. It is oxidized by the air and passes off without odor. This ability of an X-2 fabric to throw off perspiration without odor is permanent.

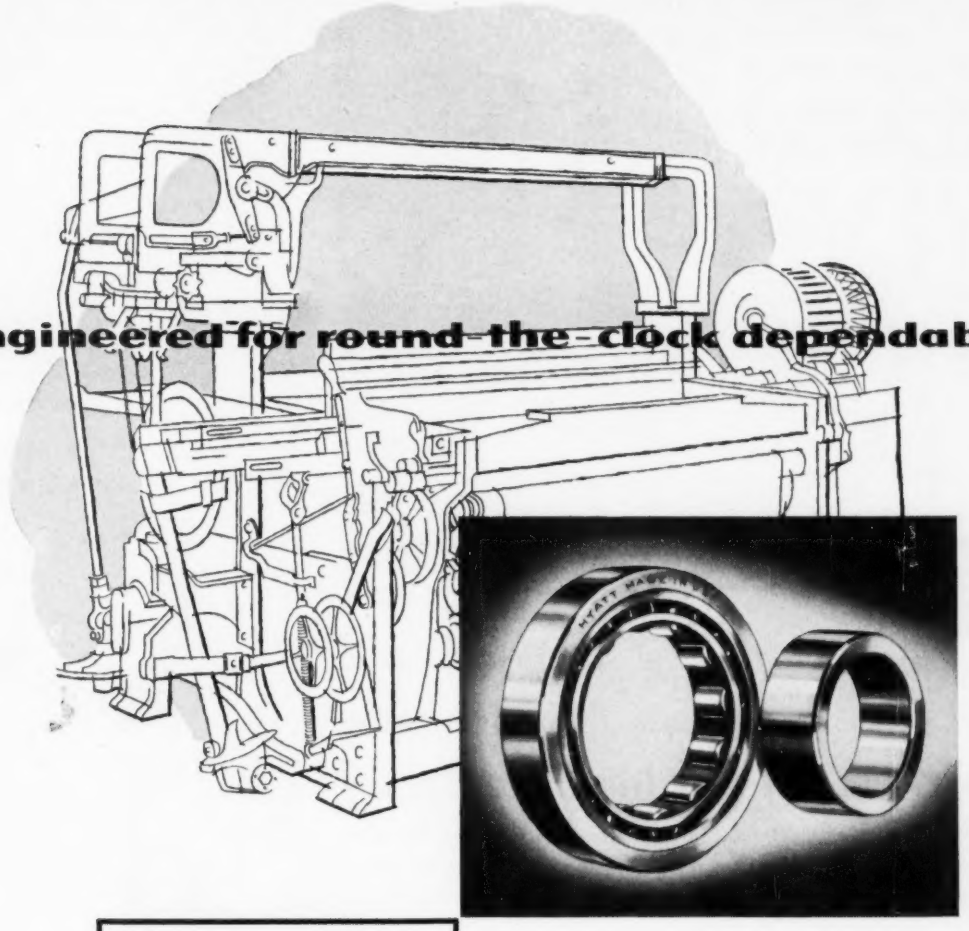
X-2 fabrics do not take up soil easily; the water-borne soil does not penetrate into the fabric and is consequently easy to remove. The X-2 chemical does not affect the hand of treated fabrics except as may be desired. The hand may be varied when the treatment is applied and the fabric may be made as soft or crisp as the trade may require. The hand is permanent and unchangeable.

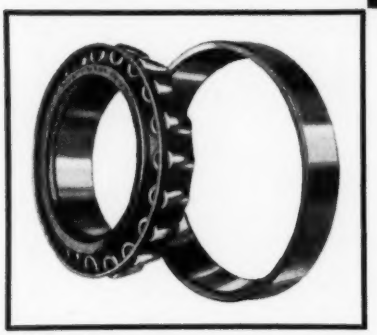
It is absolutely necessary that all fabrics to be processed with X-2 be soured as a last step prior to the treatment. After souring, the fabric must not be rinsed with water prior to drying and treatment. Souring may be accomplished with acetic acid, in three 15-min. washings in ¼% acetic-acid solution (approximately 1% of 28% acetic acid) with no subsequent rinse.

The X-2 chemical can be applied to soured rayon by padding, drying, and curing. It is completely water-soluble and compatible with a wide variety of other textile-treating chemicals. Drying temperatures and times may be considerably varied; but it is desirable to keep the temperature under 265° F., and the time should be such as will normally bring the fabric to a low moisture content. Preferably, the fabric is run directly from a pad to a pin tenter set at slightly more than the relaxed width of the fabric. The fabric should be boxed at the end of the drying frame, or run continuously into the curer. Different fabrics vary in their curing temperatures, and proper curing conditions may be obtained over a wide range of temperature and time, ranging from 380° to 280° F. for 1 to 8 min.

As with any fabric treated with resins or chemicals, it is necessary that X-2 fabrics be thoroughly washed after curing to remove unreacted and

Engineered for round-the-clock dependability!





Quitting time . . . workers stream out of the mill and a new shift takes over . . . but the machines never stop! That's why so many manufacturers of textile equipment "build in" Hyatt Roller Bearings. They know that Hyatt-equipped looms and preparatory and finishing machines will "stand up" under constant operation—because Hyatt bearings are performance-proved to last longer at peak efficiency! Down time is minimized, and equipment can be operated at higher speeds—meaning increased production and lower costs. And, because there's no leakage of grease or oil from Hyatt bearings, Hyatt-equipped machines produce cleaner yarn and cloth. For conclusive data about Hyatt bearing performance, write to Hyatt Bearings Division, General Motors Corp., Harrison, N. J.

HYATT ROLLER BEARINGS

Roof-truss design and fabrication by Timber Structures, Inc.

How American Textile protects their dye house trusses and roof-deck from rot and decay

• In 1951, when American Textile Processing Co., Inc. planned their new dye house in Paterson, New Jersey, they designed one of the most modern plants in the industry. The roof of a dye house calls for the insulating qualities of wood . . . but the constant presence of acid vapor, steam and condensate makes for a serious maintenance problem. American Textile Processing solved this problem by specifying that all wood used in the trusses and roof decking be pressure-treated Wolmanized* lumber.

Wolmanized lumber is clean, odorless, paintable and non-leaching. The ability of Wolman preservative salts to prevent decay or insect attack makes any lumber last longer in the presence of moisture and termites. There are Wolman preservative treatment plants in all parts of the country. For further information, write:

American Lumber & Treating Company

General Offices: 1601 McCormick Bldg. • Chicago 4, Illinois

Offices: Little Rock, Ark. • Portland, Ore. • Boston • Los Angeles
San Francisco • Baltimore • New York • Jacksonville, Fla.

Wolmanized
PRESSURE TREATED
Lumber

extraneous material. The fabric may require compressive shrinkage if too much warp tension has been applied in the processing. In some cases steam framing has been found desirable, and either a clip or a pin-tenter finish is satisfactory.

While there is some chemical difference between Aquex, Avcoset, and X-2, there is little, if any, difference in the end result. All three produce a permanent shrinkage control. All three impart similarly desirable properties to rayon fabrics.

Textile Equipment News

(Continued from page 162)

Multipurpose Vise Makes Welding, Brazing Easier

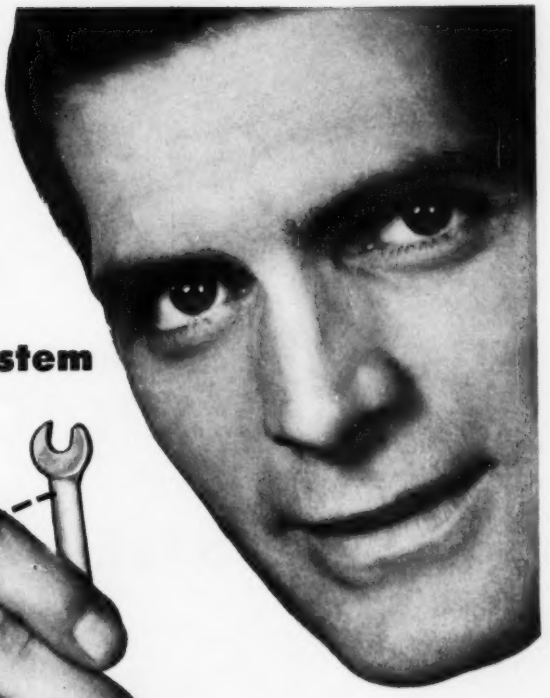
ODD-SHAPED PIECES can be held firmly and in the position needed with this special vise.

The Twinner vise, which does away with old methods of holding material to be welded and saves up to 50% of the time ordinarily needed to set up a welding job, is now being manufactured under a British license by Edmands Co., 228 Aborn St., Providence, R. I., and is available in the South from A. Benson (Ben) Davis, 2710 Picardy Place, Charlotte 7, N. C.

One man alone can do the welding, brazing, soldering, fitting, or riveting. Like a set of mechanical hands, the vise holds awkward-shaped work pieces in exact position. Weight of the machine, including the base, is 250 lb.

The 24-in. top plate and vises are cast in special iron alloy with high

Here's the only tool you need to exactly calibrate the control system of this instrument!



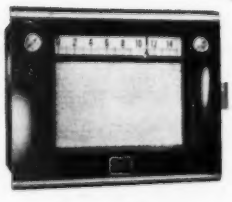
Only one simple adjustment with a standard ¼ in. wrench exactly calibrates the control system in a Bristol Series 500 Air-Operated Control System.

That's because the control units and parts are so accurately designed and the manufacturing tolerances so closely controlled that the control system can be completely disassembled and after being reassembled, even with replacement parts, can be *exactly calibrated by only one simple adjustment.*

No wonder a Bristol Series 500 Controller is the simplest and easiest control system on the market to service.

Write for Bulletin A120 for full details. THE BRISTOL COMPANY, 103 Bristol Road, Waterbury 20, Conn.

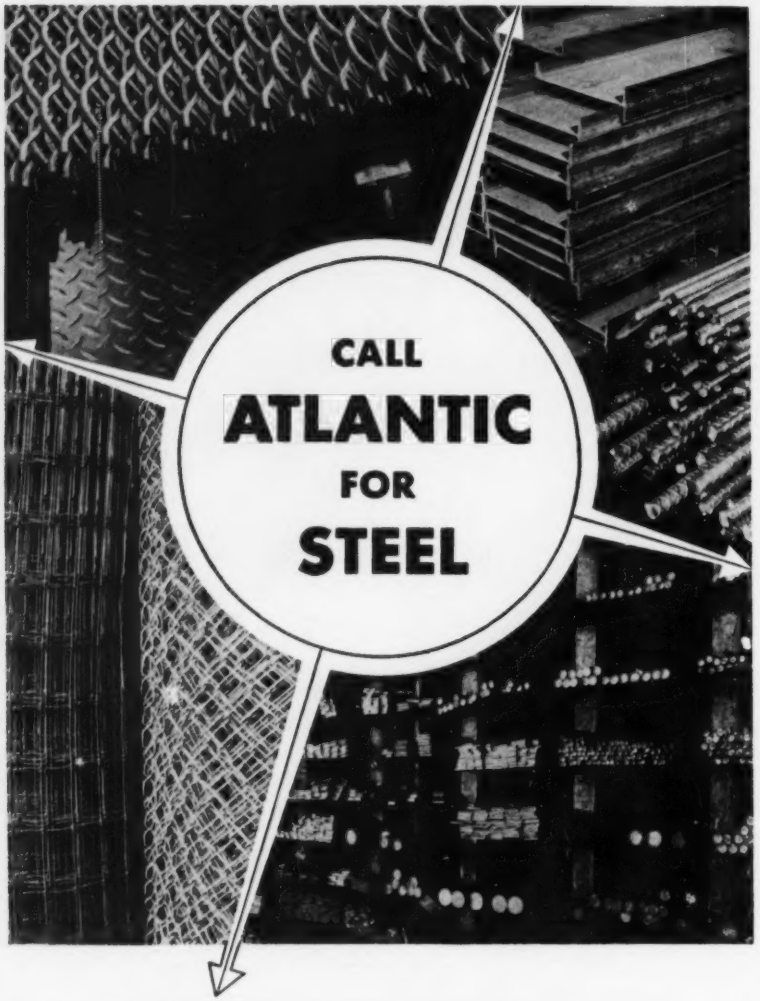
Strip and round chart Electronic Dynamaster Air-Operated Controllers are also available.



BRISTOL

The dependable Guidepost of Industry

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS



DIRECT FROM WAREHOUSE TO YOU

FROM our spacious new warehouse, we are making more and faster shipments than ever before to customers throughout the South.

Our warehouse was constructed with *service foremost in mind:* (1) To provide a wider variety of stock items, (2) To make faster deliveries, (3) To furnish a full range of warehouse services—from metallurgical advice to sawing, shearing or flame cutting.

More and more steel users are finding that our service is geared to their needs. Write, wire or telephone when you want steel *in a hurry*—one piece or a carload!

AMERICAN STEEL WAREHOUSE ASSOCIATION — BETTER DISTRIBUTION

"Service in Step With Southern Progress"

WAREHOUSE DIVISION

Atlantic Steel Company

ATLANTA, GEORGIA • EMERSON 3451

tensile strength and resistance to distortion under extreme heat conditions. All flat and bearing surfaces are machined to insure complete accuracy. Cover plates protect the vise lead screws from damage by welding sputter. Vises have vee-ed jaws for holding round stock, and convenient ball and tail handles on vise lead screws.

The slotted top plate has completely universal action. It can be tilted through 180° and locked in any position by a simple, spring-loaded plunger. It can also be revolved in a full circle and locked wherever convenient.

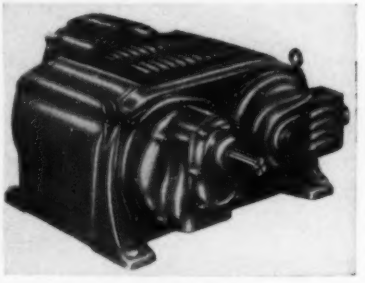
Four individual vises on the top plate slide in or out and rotate through 360°. They can be locked instantly by a single lever. Four angle plates permit the most complicated angular setups to be made in quick time. When used at 0°, each angle plate extends the working surface by 12 in. to provide a 48-in.-square working surface and to permit irregular shapes to be held rigidly in an upright position.

Over-all advantages of the vise are:

1. Cuts welding time 30% to 50%
2. Eliminates distortion in weldments
3. Assures accuracy of the weld
4. Gets broken machinery back in production quickly
5. Welding sputter won't stick to table or vise
6. Makes setups in half the usual time required

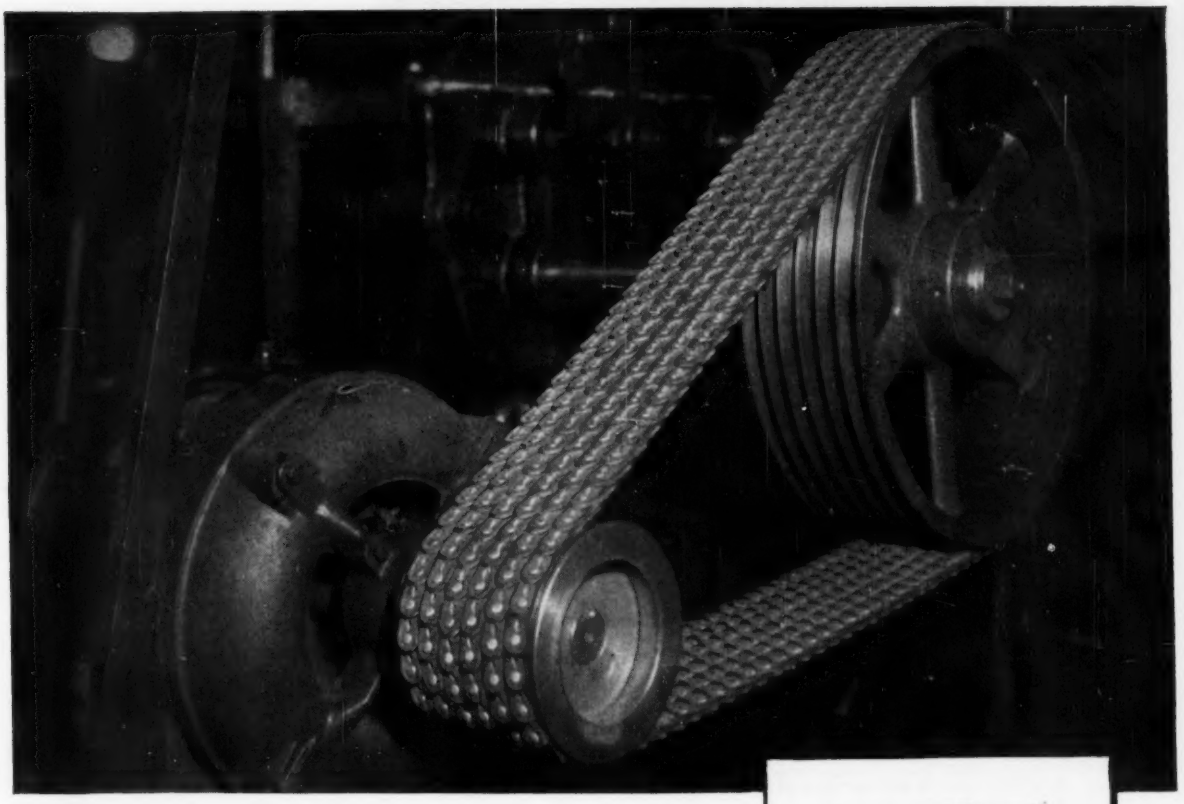
Circle T-17 on Reader-Service Card

Horizontal Assembly Makes Compact Varidrives Possible



ALL-IN-ONE CONSTRUCTION of the company's line of variable-speed drives is kept in this new horizontal assembly of the components of the drive.

Varidrive motors are now available in horizontal assembly up to 30 hp. through the addition of a new size horizontal frame, called 64 VE, that has been developed by U. S. Electrical Motors, Inc., Box 2058, Los Angeles, Calif. The new frame makes for a more compact motor installation



with Veelos on your machines...

v-belt adjustment is a production-saving job

All v-belts stretch—but with endless v-belts there's nothing you can do to take up this stretch once the motor has been completely "run-out". With Veelos it's another story! The adjustment is in the belt itself—even sliding motor bases are unnecessary.

Changing the length of each Veelos v-belt by just adding or removing links is the best, most efficient, way to keep the belts correctly matched. Using Veelos means that the job of adjustment is done easily and quickly . . . at a fraction of the cost of replacing with new belts.

Veelos, the adjustable v-belt, provides vibrationless, full power delivery. It is easier to stock and control because it is packaged on 100-foot reels in every standard width. And Veelos can be adjusted or made up in correctly matched sets with the least amount of machine down-time—at production-saving speed!

Have you seen this Veelos Facts Book?

Your Veelos v-belt distributor's salesman will be glad to give you a quick trip through this fact-packed, 36 page book. You'll find it well worth the few minutes it takes. Next time the salesman calls, ask him to show it to you.

VEELOS
THE LINK
V-BELT

Write today for your copy of the Veelos Data Book—it is a completely illustrated, 28-page catalog that gives file-worthy product and engineering facts which you should have handy. We'll be glad to send you a copy at once.

MANHEIM MANUFACTURING AND BELTING COMPANY
611 Manbel Street, Manheim, Penna.

ADJUSTABLE TO ANY LENGTH • ADAPTABLE TO ANY DRIVE

 For more information, write direct or use Reader Service post card.

designed for TEXTILE INDUSTRIES

the

SPIROKLEEN

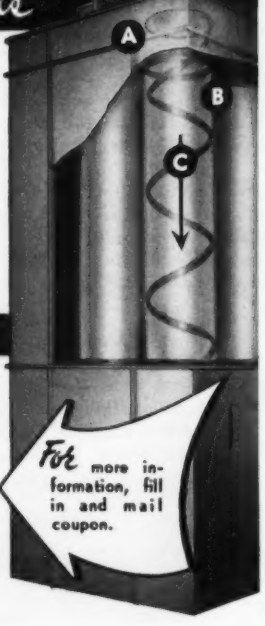
DUST COLLECTOR

by **TURNER & HAWS Engineering Co., Inc.**

Designed on the efficient filter bag principle of dust collection, SPIROKLEEN removes fibrous material and dust from textile mill air and recirculates the air 99.9+% clean.

In SPIROKLEEN, the polished aluminum spiral element continuously removes excess dirt from the inside surface of the filter bags, leaving a uniform deposit to provide an adequate filter effect plus high volume air flow without clogging. The combination of filter fabric with the uniform dust layer inside insures highly efficient air cleaning.

Here's how SPIROKLEEN *works*



A. Dust laden air enters top of filter bags.

B. Dust and lint is removed from air stream and retained inside filter bag.

C. Rotating spiral element continuously removes excess material from the inside of the filter bags and deposits it in the hopper below.

For more information, fill in and mail coupon.

Turner & Haws Engineering Co., Inc.
87 Gardner St., Boston 32, Mass.

☐ Please send me more information on SPIROKLEEN
☐ Have representative call

Name _____

Address _____

City _____ Zone ____ State _____

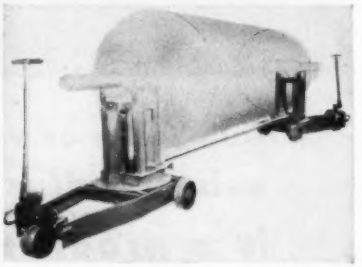
in applications demanding horizontal assemblies.

The 64 VE possesses all the plus features of the upright 64 Varidrive, including all-in-one construction (motor, variable-speed transmission and gearing when necessary), micro-speed control and indicator, splined disk sheaves, double-cog belts with tension control for permanent belt adjustment, dual belt construction, asbestos-protected motor, and normalized castings. The 64 VE is also available in combination with the company's synchronized gearing system and with either single- or double-reduction gearing.

Motor controls may be conveniently located above or at the side of the motor. Remote controls are available either with mechanical extensions or electric push-button stations. Ratings from ¼ to 50 hp. are offered, with speed variations up to 10:1. Speeds range from 2 to 10,000 rpm.

Circle T-18 on Reader-Service Card

Heavy Calender- or Beam-Handling Unit Developed



A NEW FLOOR TRUCK for heavy calender-roll or beam handling up to 15,000-lb. capacity has been built commercially by Lewis-Shepard, Inc., Walnut St., Watertown, Mass. Suited to a wide variety of applications, the truck is ideal for operations where the movement of any heavy and long rolls, beams, or cylinders is involved.

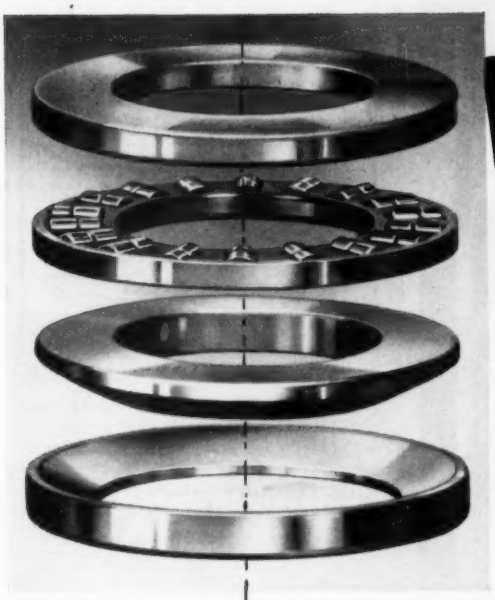
Hardwood V-blocks are mounted on dual steel turntables, which are connected at their base by a tubular member so that the load is kept in line for straight and corner traction. Maximum maneuverability is the result because the V-block prevents any damage to rolls.

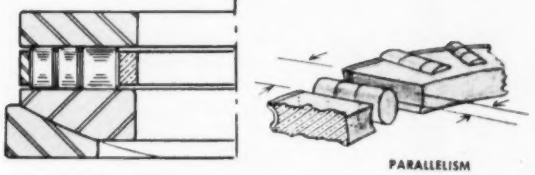
By varying the length of tubular connecting rod, turntable dollies can then accommodate various-length rolls or beams.

Circle T-19 on Reader-Service Card

Weighing Scales Made Air-Tight by Liquid Seal

The Cunningham scale seal, a new device that fits over standard models of weighing scales and protects them completely from foreign matter and corrosion under severe industrial conditions, has been brought out by Applied Engineering Co., Box 506,





PARALLELISM

ACCURATE PARALLELISM between the rollers and the matched thrust plates is repeated in the parallelism between the separator slots and the rollers themselves—all adding up to quietness, equalized wear and longer life.

THRUST RADIAL

RIGHT ANGLE
Roller Ends, precisely square to avoid end-rub, oscillation and side-shock.

- **RIGHT ANGLE**
Bearing Surfaces with parallelism that results in unwavering right-line rolling.

- **RIGHT ANGLE**
Separator Slots accurately machined to prevent roller skew, slide and uneven wear.

Held to extremely close limits of parallelism, every roller—every race—every thrust plate in a Rollway Bearing is an engineering masterpiece of matched precision and right-angle trueness. As a result, friction losses are low—load capacity and service life high.

Rollway Radial and Thrust Bearings offer the widest selection in types and sizes, available for quick replacement through authorized distributors. Consult your classified phone directory under BEARINGS.

Our engineers are available without cost or obligation to assist you in selecting the correct Rollway Bearing for your needs. Call your nearest Rollway sales office.

ROLLWAY BEARING CO., INC.
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ROLLWAY BEARINGS

Complete Line of Radial and Thrust Cylindrical Roller Bearings

For more information, write direct or use Reader Service post card.

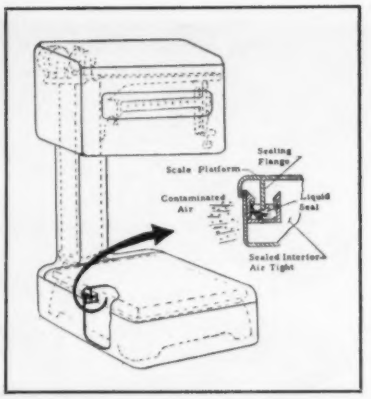
. . . Especially Designed by
Darnell Engineers for Use on
DOFFING TRUCKS

THE XE-74-WCI

Darnell designed for Doffing Trucks here is a caster that will give years of trouble-free service. that stands the abuse peculiar to Doffing Truck operation. Note the extra-heavy rimmed, high crowned Darnelloy wheel, featuring closely fitted string guards which keep caster free-rolling at all times. Extra heavy ball races and cones with solid row of precision balls. Alemite Zerk lubrication. Wheel designed for large grease capacity.

Why Not Ask Your Distributor To Show You This New Caster

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS



UNDERNEATH EDGE of scale platform projects down into the liquid-seal trough and keeps dust-laden air out of the scale mechanism. The scale column and weighing head are alse completely enclosed.

Orangeburg, S. C. The feature of the device is a patented liquid seal.

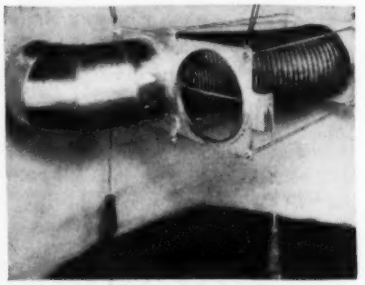
The sealing flange is fixed continuously around the under side of the moving platform; thus an air-tight seal is effected. The flange protrudes at all times into the liquid channel, irrespective of the weight applied to the scales, and is always free from contact with anything except the liquid.

The column and head of the scales are also completely enclosed. An access door and windows provide a means for making weight settings and readings.

The entire device is designed as a take-down model to permit inspection of scales as required by some State laws. It is available for practically any model of weighing scale, including various indicators.

Circle T-20 on Reader-Service Card

Overhead-Line Switch Is Made of Flexible Tubing

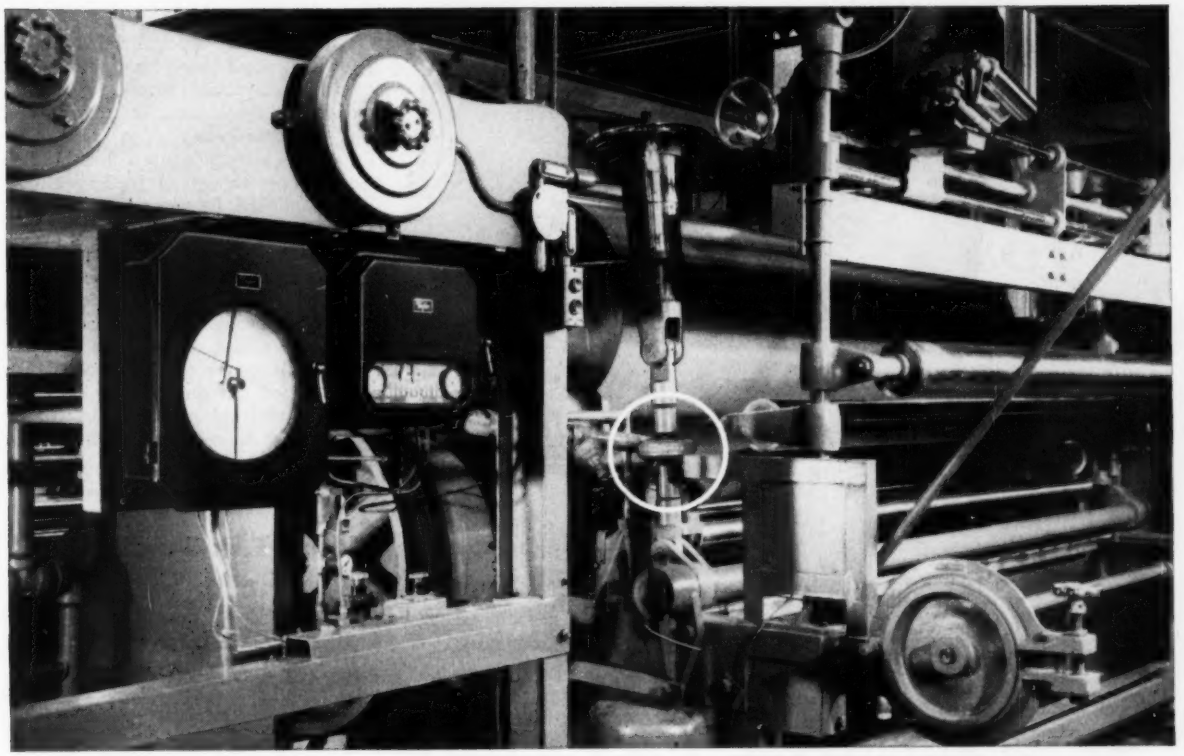


ROPE-AND-PULLEY ARRANGEMENT that bends the flexible tubing makes it easy to switch stock from one card line to another and to clean out the lines when necessary.

A raw-stock overhead-line switch for use in woolen and worsted mills to control the flow of raw stock to the cards has been put on the market by

"UNIFORMITY" SOUNDS DULL

. . . but it means dollars to Dan River Mills Inc.



THE Taylor Dye Padder Control System, shown in operation on the Morrison pad installed at Dan River Mills Inc., gives them more uniform dyeing and safeguards Dan River's fine reputation for uniform high quality. It also means fewer rejects.

HERE'S HOW THE SYSTEM WORKS:

A FULSCOPE* Indicating Liquid Level Controller maintains the level of the dye liquor in the liquor box, to assure uniform immersion of the stock.

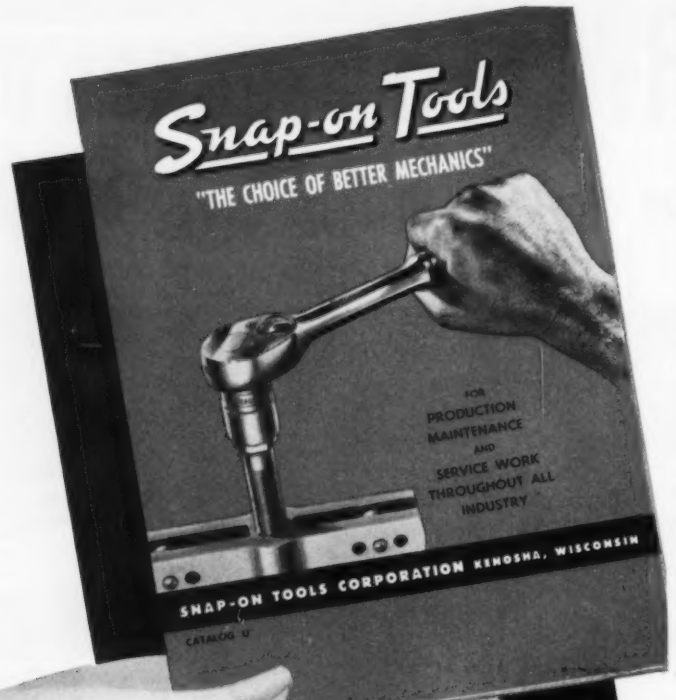
A Taylor Volumetric Load Recorder gives an accurate indication of the pressure exerted across the squeeze rolls, thereby permitting uniform dye penetration and subsequent uniform dye development. By means of this Load Recorder, precise adjustments can be made in the loading of the squeeze rolls. This is the result of recent developments in Taylor Volumetric Load Measuring elements which affords a wide variety of ranges, greater range suppression, greater over-range protection, and greater energy for positioning the pen or actuating a control mechanism.

The diaphragm measuring element (circled above) is made of hardened alloy steel, connected to a Bourdon spring in the recorder by means of a mercury filled capillary tubing. It is installed in the direct line of force, so as to be independent of friction or other factors which would affect accuracy of measurement. This type of element can be used on many other roll processing applications, such as slashers, calendar rolls, etc.

For full details, ask your Taylor Field Engineer, or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.*

*Reg. U. S. Pat. Off.

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST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"THE CHOICE OF BETTER MECHANICS"
FOR PRODUCTION MAINTENANCE AND SERVICE WORK THROUGHOUT ALL INDUSTRY
SNAP-ON TOOLS CORPORATION KENOSHA, WISCONSIN
CATALOG U

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SNAP-ON TOOLS CORPORATION
8100-E 28th Avenue, Kenosha, Wis.

*Snap-on is the trademark of Snap-on Tools Corporation.

Benoit Mfg. Co., Box 112, Charlton City, Mass. A flexible-metal switch, the unit was developed over a year and a half ago, and two New England mills have been using it successfully for the past year. It consists of a metal frame, within which a length of flexible tubing is contained.

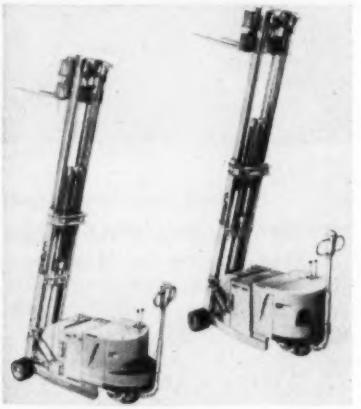
This metal frame is suspended from the ceiling at a level where the openings in the flexible tubing will connect with the main supply lines. Two or more openings are supplied in the metal frame at the outlet end.

When one hopper or bin to an individual card has been filled, the tubing is moved across to another opening, by means of a rope and pulley arrangement, to feed into another hopper or bin for another card. This change of feeding can be accomplished by means of the rope and pulley arrangement, as shown in the accompanying photograph, or it can be done electrically.

The automatic feeding device has a distinct advantage in that whenever the elbow of the feed line becomes clogged with raw stock, it can be cleaned out quickly and easily by merely shifting the flexible tubing to another opening. Thus the clogged elbow is left clear and easy to get at.

Circle T-21 on Reader-Service Card

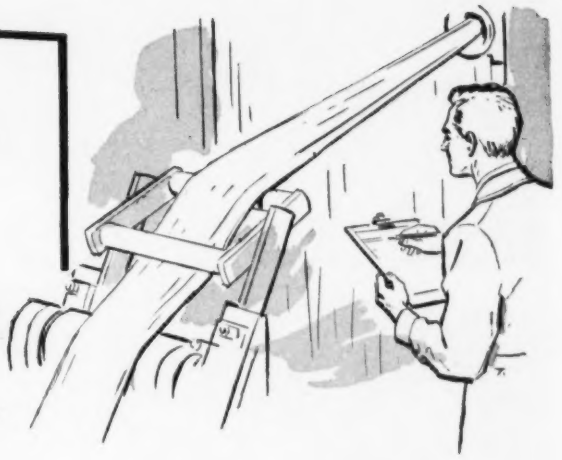
Tilting Fork Stackers Lift 100 and 130 In.



NARROW AISLES can be maneuvered in more easily with these fork trucks whose stacks tilt back 24 in. to minimize floor-space requirements.

Telescopic tilting fork stackers in four base capacities (of 1500, 2000, 2500, and 3000 lb.), all rated at a 24-in. center line of load, have been brought out by Clark Equipment Co., Industrial Truck Div., Circle Drive, Battle Creek 27, Mich. Two standard models are offered: one with an 83-in. over-all height, 64 in. of free lift,

GET A BETTER PICTURE OF YOUR PEROXIDE BLEACHING OPERATIONS



Du Pont Bleachery Survey Pinpoints Production Problems ...Can Help Lower Your Costs

Production up 22½%! Water consumption down 48%! These are typical gains resulting from recent surveys by Du Pont specialists. This service may be able to help your mill reach or maintain peak efficiency.

Du Pont Bleachery Surveys are conducted by men with wide experience in all phases of textile bleaching. Without interrupting production, they spend from one to three days surveying a plant. Fuel, water and chemical consumption are studied . . . cloth production checked...quality of finished goods examined.

During their study, the Du Pont specialists take samples of cloth at each stage of the bleaching process. These samples, together with the necessary data, are sent to a Du Pont laboratory for complete analysis. Reports prepared by specialists are next reviewed by top experts and then forwarded to the mills. Included are recommendations for reducing costs and improving the product.

This valuable Du Pont service is offered without charge to all users of peroxide in the United States. Whether or not a survey is required, your mill's technical staff is invited to discuss bleaching problems at any time with Du Pont specialists.

DU PONT PEROXIDES

FOR TEXTILE BLEACHING

Available in drums and tank cars { **"Albone" 35 . . . Hydrogen Peroxide, 35%** / **"Albone" 50 . . . Hydrogen Peroxide, 50%**

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

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E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Department, Wilmington 98, Del.

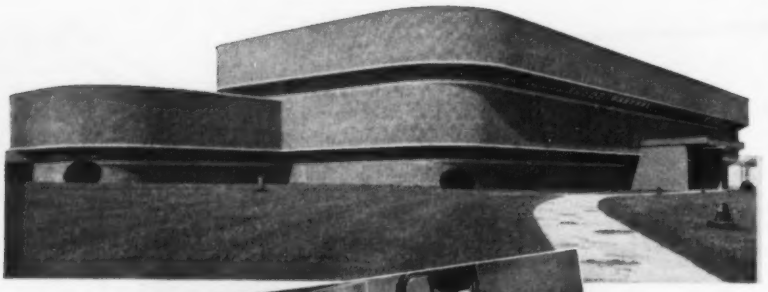
Please send me more information about the free Du Pont Bleachery Survey. I am bleaching ☐ cotton ☐ wool ☐ man-made fibers.

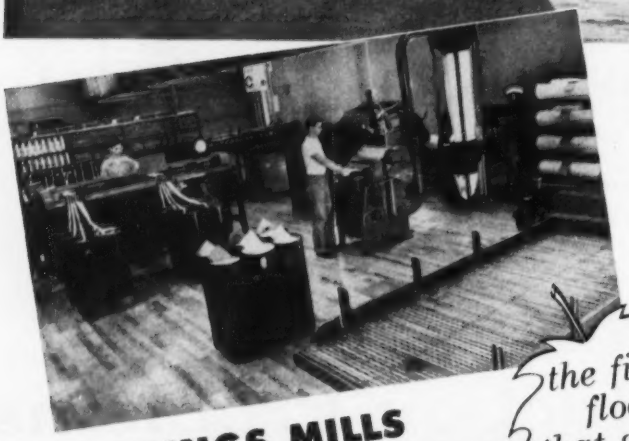
*Name*_____ *Title*_____

*Firm*_____

*Street & No.*_____

*City*_____ *State*_____





for SPRINGS MILLS

the finest floor that grows

foot-friendly

NORTHERN HARD MAPLE

You'd expect the new Springs Mills office building and laboratory to be truly *modern*—and it is. And quite as modern as its exterior design, its air-conditioning, its fine testing and production equipment and its unique custom furniture, are its floors—of *forever-modern* **MFMA** Northern Hard Maple. They're splendid, enduring floors, tight and bright and crevice-free, resilient, easy to maintain and *easy on the feet*. That's important. Foot-friendly maple floors cut down fatigue . . . which cuts down errors . . . which makes business better and more profitable. Springs Mills architect was Roberts & Co. Associates, Atlanta. Ask *your* architect, or see Sweet's (Arch. 12 K-MA). Write for New Flooring Textbook.

MAPLE FLOORING MANUFACTURERS ASSOCIATION

Suite 592, Pure Oil Building, 35 East Wacker Drive • Chicago 1, Illinois

FLOOR WITH *NORTHERN* HARD MAPLE

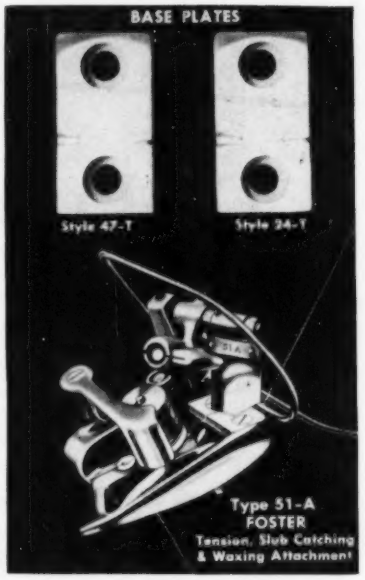
BEECH AND BIRCH

and 130 in. of maximum lift; the other with a 68-in. over-all height, 49 in. of free lift, and a maximum lift of 100 in.

Light in weight yet compact in length and width, the trucks provide maximum utility for operation in narrow aisles and over low-capacity floors. Lifting speeds vary from 21 to 14 ft. per min.

Circle T-22 on Reader-Service Card

Foster Slub Catchers Have Longer-Lasting Base Plates



CERAMIC BASE PLATES, in two styles, designed to last much longer than steel, are now standard equipment on the 51-A tension, slub-catching, and waxing attachment that is used on the Model-102 winder, Foster Machine Co., Westfield, Mass., has announced. Tests have shown that the new base plates are much more resistant to the cutting action of worsted and other types of yarn than hardened steel and that they last four or five times as long.

The plate is attached to the slub catcher underneath the slub-catching blade. The yarn enters through the narrow groove in the plate, passes under the blade, and leaves through the wide groove in the plate. The automatic inspection provided by the groove is reported to be very efficient in breaking out long cigar-shaped slubs and to be especially valuable in making high-quality worsted fabrics.

Circle T-23 on Reader-Service Card

Improved Fork-Truck Transmission Makes Shifting Easier

A new three-speed transmission and a new style fork-mounting plate assembly has been incorporated in its improved Yardlift-60 fork truck, according to Clark Equipment Co., In-

You could know the plant... 20 years of steady growth ...20 years of work, brains and money...then in 20 minutes a little fire got away and reduced it all to nothing.

But, your larger size fire hazards can be protected very efficiently at a reasonable cost, thanks to C-O-TWO Low Pressure Carbon Dioxide Type Fire Extinguishing Systems. Simple piping, running from one centrally located storage tank, instantly transports clean, non-damaging, non-conducting carbon dioxide anywhere in the plant area...to flammable liquids, electrical equipment, storage spaces, manufacturing processes and record vaults. Fire at any protected location is extinguished in seconds with an absolute minimum of expense and interruption.

Flexibility is the keynote with these C-O-TWO Fire Extinguishing Systems . . . the low pressure carbon dioxide storage tanks range in capacities from one to fifty tons . . . discharge facilities can either be manual mechanical, manual electric, automatic mechanical, automatic electric or a combination of these . . . especially installed to fit your particular needs. Future plant expansion is easily and economically provided for by initially installing an oversized low pressure carbon dioxide storage tank and adding the supplementary discharge facilities at a later date.

Whether it's fire detecting or fire extinguishing . . . portables or built-in systems . . . C-O-TWO means experienced engineering that assures you of the best type equipment for the particular fire hazard concerned.

WHEN BUSINESS STOPS . . . INCOME STOPS!
Don't take chances with your investment. Secure the benefits of highly efficient fire protection engineering today . . . our extensive experience over the years is at your disposal without obligation. Get the facts now!

C-O-TWO

MANUFACTURERS OF APPROVED FIRE PROTECTION EQUIPMENT

Squeez-Grip Carbon Dioxide Type Fire Extinguishers
Dry Chemical Type Fire Extinguishers
Built-In High Pressure and Low Pressure Carbon Dioxide Type Fire Extinguishing Systems
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AFFILIATED WITH PYRENE MANUFACTURING COMPANY

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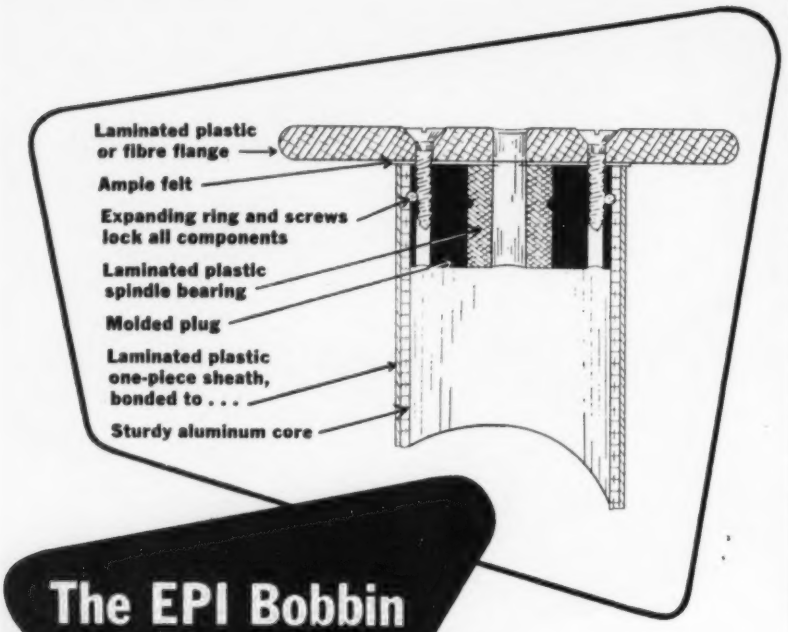

Laminated plastic or fibre flange
Ample felt
Expanding ring and screws lock all components
Laminated plastic spindle bearing
Molded plug
Laminated plastic one-piece sheath, bonded to . . .
Sturdy aluminum core

The EPI Bobbin is Better Built

The EPI bobbin is built and assembled *from the spindle outward,* with every part machined concentric to the spindle. All parts are permanently locked together with our patented* expanding lock ring assembly. This makes the strongest bobbin you can use for nylon or other tenacious yarns.

Every EPI bobbin is dynamically balanced. Experience has shown that even minute variations in methods and materials used can show up in excessive spindle and machine wear, increased maintenance costs, higher power consumption, and poorer quality yarn. Dynamic balancing plus concentric construction make the EPI a smooth running bobbin.

It will pay you to write, wire, or call for full information on the EPI bobbin.

*U.S. Patent 2,625,343

ENGINEERED *Plastics*
INCORPORATED
Gibsonville, North Carolina

dustrial Truck Div., Circle Drive, Battle Creek 27, Mich.

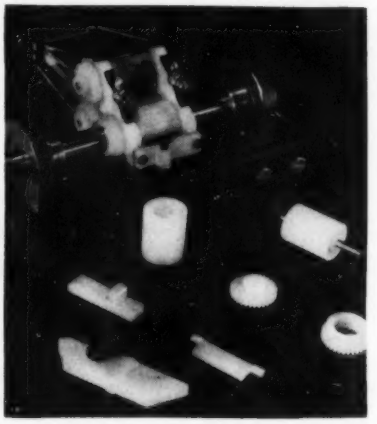
Speed ratios between the first, second, and third gears at gear-changing speeds are considerably less than with a two-speed transmission. This arrangement results in smoother, easier shifting. In addition, the use of an intermediate gear permits a lower first-gear ratio. The low-speed gear in the new transmission has doubled the power of the Yardlift-60; so it is able to climb a 24% grade under full load.

The new transmission will be used only in the friction-clutch model.

The new fork mounting is designed for greater interchangeability of attachments and devices between all makes of trucks with comparable capacity.

Circle T-24 on Reader-Service Card

Molded Nylon Elements for Macdonald Long-Draft System



TRIAL PRODUCTION of long-draft spinning units in which a total of 13 nylon parts are used has been undertaken by Macdonald & Sons, Inc., Box 706, Providence, R. I. Mills in the U. S., Canada, and England have tried the nylon components in test lots and have reported favorably on them.

Advantages of the nylon components are the elimination of oiling, the longer wear life then obtained from other materials, and the lowered power requirements that result from the nylon's low coefficient of friction.

Circle T-25 on Reader-Service Card

Variable-Speed Unit Combines Flexibility And Low Cost

The Flexi-Speed drive, a new variable-speed unit that combines great flexibility in operation and application with low unit cost, has been introduced by Reeves Pulley Co., 1225 Seventh St., Columbus, Ind.

The drives can be mounted in al-

A Flexible Source of

ACETIC ANHYDRIDE

FOR ALL INDUSTRIES

New plant at Pampa, Texas can now provide dependable large volume supplies of Celanese* Acetic Anhydride

Manufacturers of dyestuffs, plasticizers, pharmaceuticals, plastics, textile processing compounds, can now look to Celanese for continuous supplies of acetic anhydride. New producing units in Texas and Canada will assure your industry of a productive capacity and flexibility to meet current demands as well as anticipate future industrial requirements for this important acetylating and dehydrating agent.

Volume quantities of Celanese Acetic Anhydride are immediately available, in tankcars, tankwagons and drums for shipment from centrally located distribution points. For complete data, samples, prices, and technical assistance, write: Celanese Corporation of America, Chemical Division, Dept. 571-E, 180 Madison Avenue, New York 16, N. Y.

CELANESE
ACETIC ANHYDRIDE
SPECIFICATIONS

Color APHA	10
Spec. Grav. 20°/20° C.	1.080-1.085
Acetic Anhydride, Min. %	97.5
Reducing Test	Pass
Permanganate Test	

ACETYL CHEMICALS by CELANESE

ACETIC ACID
ACETALDEHYDE
ACETIC ANHYDRIDE

*Reg. U. S. Pat. Off.

How to keep informed on the "with what" part of your business

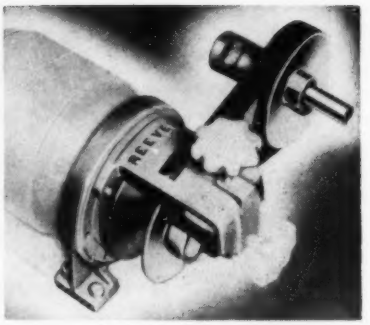
AT YOUR FINGER TIPS, issue after issue, is one of your richest veins of job information – advertising. You might call it the "with what" type – which dovetails the "how" of the editorial pages. Easy to read, talking your language, geared specifically to the betterment of your business, this is the kind of practical data which may well help you do a job quicker, better – save your company money.

Each advertiser is obviously doing his level best to give you helpful information. By showing, through the advertising pages, how his product or service can benefit *you* and *your* company, he is taking *his* most efficient way toward a sale.

Add up all the advertisers and you've got a gold mine of current, on-the-job information. Yours for the reading are a wealth of data and facts on the very latest in products, services, tools . . . product developments, materials, processes, methods.

You, too, have a big stake in the advertising pages. Read them regularly, carefully to keep job-informed on the "with what" part of your business.

McGRAW-HILL PUBLICATIONS



ADAPTABLE to a wide variety of installation conditions is the new Flexi-Speed drive in ½-, ¾-, and 1-hp. capacities.

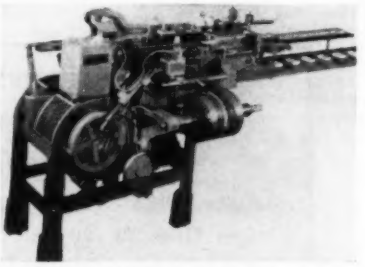
most any position around the driven equipment, can drive in any direction, and can deliver any desired speed within a ratio of 8 to 1.

The driven shaft may be located anywhere around the motor shaft, and the speed control handwheel may be located parallel to or in any of eight positions perpendicular to the motor shaft. Six different-length belts offer a wide choice of shaft center distances.

Inexpensive to install and maintain, the new drive is presently available in ½-, ¾-, and 1-hp. capacities. They are adaptable to essentially all industrial applications, including those with in-line or right-angle reducers, countershafts, chain and sprocket, or V-belt drives; and they are designed for driving to standard gear reducers for parallel drives, or worm-gear reducers for inexpensive right-angle drives.

Circle T-26 on Reader-Service Card

Wrapping Machine Has "Tight" and "Loose" Attachment



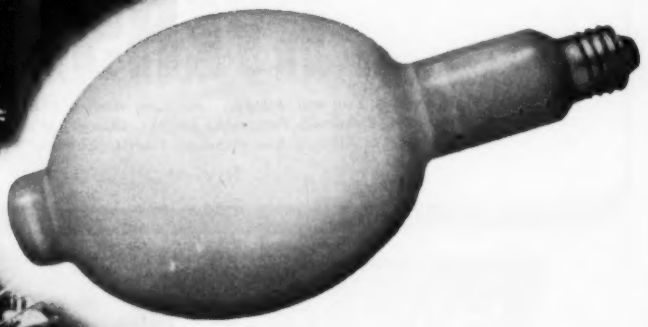
PERFECTLY TIGHT WRAPS are assured from this wrapping machine that squeezes the material before the wrapping is sealed. Various package sizes can be handled at speeds running from 20 to 50 packages per minute.

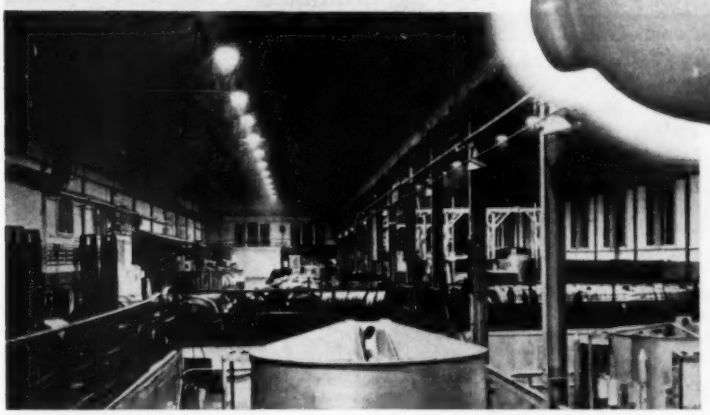
A new wrapping machine with a feature whereby the wrapping material is tightly wrapped about the product by means of a new "tight" and "loose"

For more information, write direct or use Reader Service post card.

32 Westinghouse Mercury Type Lamps replace 44 Incandescents —Give 7 Times More Light

BEFORE changing to the Mercury type lamps, John A. Roebling's Sons Corp. used 44 incandescent lamps to light their annealing plant.





AFTER changing to Westinghouse Fluorescent Mercury Lamps—the new design that gives white light—John A. Roebling's Sons needed only 32 lamps to light the same area. These 32 lamps gave 7 times as much light as the Incandescents.

When lighting factories, terminal buildings, parking lots, railroad yards and highways . . . Westinghouse Mercury type lamps are more efficient and economical. They produce more light per watt than Incandescents, and have a rated average life of 5000 to 6000 hours. As a result, you reduce total lighting costs. Since you use fewer, longer-lasting Mercury lamps your maintenance costs are cut to the bone.

WHERE YOU WANT WHITE LIGHT, you can use Westinghouse Fluorescent Mercury lamps. They produce white light with regular Mercury lamp economy and eliminate color-correcting Incandescents. *The newest size Westinghouse 1000-watt Fluorescent Mercury lamp is the cheapest source of mass white light in the world.*

The facts are in a 24-page booklet that is yours, free for the asking. Write to: Westinghouse Lamp Division, Dpt. TW-5, Bloomfield, New Jersey.

YOU CAN BE SURE...IF IT'S Westinghouse

STEEL

Every Kind

Some steel products are in short supply but over-all stocks are still large, diversified

Plates, Structurals, Bars, Sheets, Tubes, etc. . . . Carbon, Alloy and Stainless Steels . . . .

RYERSON

Joseph T. Ryerson & Son, Inc. Plants: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles, San Francisco, Seattle, Spokane.

Spherical Tanks on Tubular Towers

The COLE Spherical Tank on Tubular Tower is unique in its field. We design and erect special tanks of this character. It provides an attractive and serviceable unit—economical to maintain, efficient in service and pleasing in appearance.

Write for special booklet on these modern, welded Spherical Tanks which provide gravity water pressure, and for copy of latest Cole catalog, "Tank Talk."

●

Established 1854

COLE

R. D. MFG. CO.

NEWNAN, GEORGIA

ELEVATED TANKS • VESSELS • CYLINDERS
TOWERS • BINS • STANDPIPES

wrapping attachment has been developed by Hayssen Mfg. Co., Dept. TW3, Sheboygan, Wis.

The new C-U-F machine carries the product forward over rubber rollers that can be set to squeeze the package as tightly as necessary to insure a perfect, tight wrap. At the same time, the package is pressed to eliminate any air space between the product and the wrapping material.

The end folds of the package are the V-type underfold. They are pressed against the bottom of the package in a neat, positive, moisture-proof fold. The end folds are completed and sealed while the package is held securely in position.

The new machine wraps material on flat cards, scored cards, U-boards, or trays. The machine is easily adjustable and available in models capable of handling packages 3 to 24 in. in length, 2 to 11 in. in width, and ⅛ to 2½ in. in height. Speed is adjustable from 20 to 50 packages per minute.

Electronic controls are an integral part of the unit and assure positive registration and control of the printed wrap on the package.

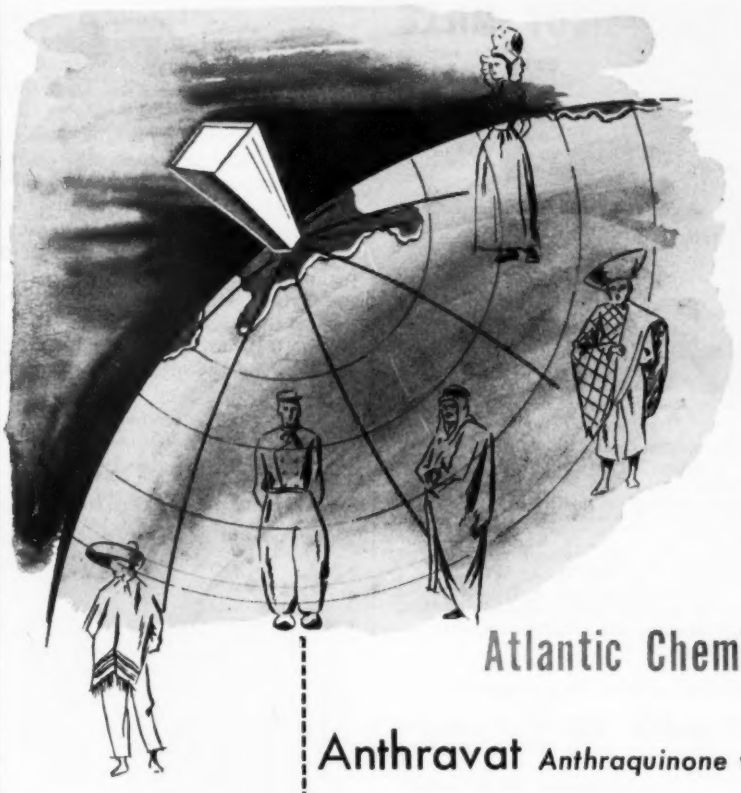
The machine can be equipped to handle all standard types of wrapping material and is being adapted now for band-sealing of polyethylene and other special materials.

Circle T-27 on Reader-Service Card

Lift-Truck Coupling Done From Driver's Seat

TRAILER PICKUP AND RELEASE are speeded by means of these replacements for the standard type of towing eye ordinarily used with lift trucks and trailers.

Automatic couplers to attach to its line of lift trucks and trailers have been made available to mills by Towmotor Corp., 1220 E. 152nd St.,



Manufacturers of Superior Dyestuffs

Atlantic Chemical Corporation

Anthravat *Anthraquinone vat dyes*

Thiovat, Thioprint *Thioindigoid vat dyes*

Printing *Stabilized azoics*

Atlantic Resin Fast *Direct dyes*

Atlantic Direct *Direct dyes*

The greatest names in textiles insist on Atlantic ***quality-controlled*** dyestuffs

Atlantic DYESTUFFS

Atlantic Chemical Corporation

MANUFACTURERS OF COAL-TAR INTERMEDIATES AND DYESTUFFS

Executive Offices: 153 Prospect Street, Passaic, New Jersey
Works and Laboratories: 10 Kingsland Road, Nutley, New Jersey
CABLE ADDRESS, "ANILDYE—PASSAIC"

"DRY" HUMIDIFICATION for TRICOT MILLS

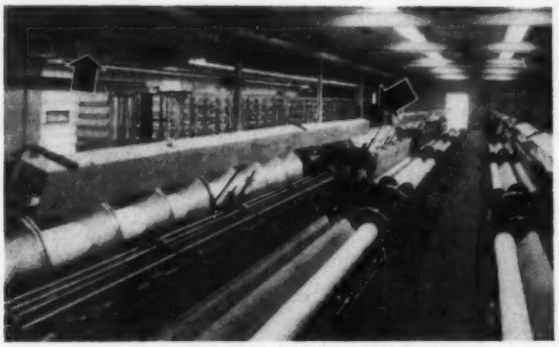


Photo courtesy Security Tricot Mills, No. Wales, Pa.

- Eliminates static electricity
- Reduces needle breakage
- Keeps warps smooth, free from ridges and valleys
- Reduces end breaks
- Permits maximum speed in operation of tricot machines
- Assures highest quality of product

The "Dry" Humidification system humidifies adequately without releasing any free moisture into the atmosphere—NO SPRAY, NO MIST, NO SPOTTY AREAS. Needles, machinery and fabrics are protected from rust and damage. No central system is required. Easy to install. If desired, heating and comfort cooling may be incorporated for complete air conditioning. Models available for every type of knitting plant and textile process.

Write for pamphlet describing controlled indoor weather for knitting mills.

AIR-PERME-ATOR MFG. CO.

"Dry" Humidification System

300 PREAKNESS AVENUE **PATERSON, NEW JERSEY**

Southeastern Representative: Lucas Associates, Inc., Box 1696, Charlotte 1, N. C.

How to speed production with MAGNIFIERS

New! Illuminated 10X Pocket Magnifier

WRITE for new handbook and catalog, "Industrial Magnifiers—How to Choose and Use Them." Bausch & Lomb Optical Company, 50117 Bausch St., Rochester 2, N. Y.

Cut waste, get faster, surer inspection by fitting the magnifier to the job. This new Bausch & Lomb Illuminated Coddington floods entire viewing field with bright light *through* the lens, permitting quick, accurate inspection on the spot, without need for outside lighting. Image quality is excellent! Carry this new magnifier with you always—anywhere $7.50

Another product by Bausch & Lomb — recognized world leader in all things optical

BAUSCH & LOMB *Magnifiers*

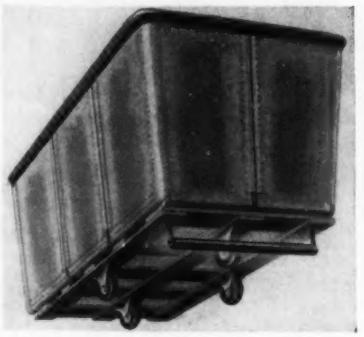
Cleveland, Ohio. Installed as replacements for standard towing eyes, the couplers speed the pickup and release of trailers used with Towmotor units.

Each of three types is built with an open jaw that automatically makes the connection when it is entered by the trailer coupler. One type provides a hand-operated release lever, another employs a foot lever, and the third permits operation of the release mechanism either manually or by foot pressure.

Two of the couplers are spring-actuated and the other utilizes a ball-type lock.

Circle T-28 on Reader-Service Card

Truck Picks Up Travelers As It Passes Over Them



A NEW DOFFER-TRUCK MAGNET has been developed by Eriez Mfg. Co., 1945 Grove Drive, Erie, Pa., for picking up light pieces of tramp iron as the truck moves around the textile mill. A tube type of permanent magnet, it is attached to the under side of the doffer truck and permits collection of traveler rings and other small pieces as the truck passes over them.

The non-electric magnets pick up iron and steel pieces by a strong magnetic sweeping action.

The hanger brackets are made to spread slightly to make it possible to remove the magnetic unit for cleaning. The tube is easily cleaned by wiping with a cloth and is then put back into the truck brackets.

The unit consists of a 1-in.-dia. aluminum tube, within which are the Alnico-V permanent magnetic elements. Steel mounting pins extend from each end of the tube. Adjustable mounting brackets are furnished with each magnet.

The unit is made in five standard sizes: 12, 16, 20, 24, and 28 in. wide.

Circle T-29 on Reader-Service Card

New Drafting Assembly Features Low Cost

A new saddle and top-roll combination has been introduced by Dixon Lubricating Saddle Co., Bristol, R. I., that eliminates oiling and reduces power consumption in the drafting sections of spinning

when you specify light wall schedule 5 pipe

WHAT SCHEDULE 5 PIPE IS—
A light wall pipe, Carpenter Schedule 5 gives you more feet of pipe for every pound of scarce stainless steel. So you can quickly see how Schedule 5 reduces your cost per foot. Plus the fact that the larger I.D. means increased flow area.

HOW SCHEDULE 5 REDUCES COSTS
First saving is 40% to 50% on the cost of your pipe.

Since Schedule 5 is considerably lighter, this means quicker and easier installation.

And, because the increased capacity of Schedule 5 lets you use the next smaller pipe size, you can reduce substantially your costs of valves, fittings, etc.

FITTINGS ARE AVAILABLE
This pipe is easily adapted to use with existing lines of tubing or Schedule 40 and 10 pipe, using simple connectors. Fittings as well as stocks of Schedule 5 pipe are carried by conveniently located Carpenter distributors.

ADDITIONAL ADVANTAGES

Tubing sizes can now be replaced with light wall *pipe* . . . for ready hook-up with standard valves, pumps and other equipment which is normally manufactured in pipe sizes.

Data Sheets give you complete information about Carpenter Schedule 5 Stainless Pipe. Write for your personal copy. THE CARPENTER STEEL COMPANY, Alloy Tube Division, Union, N. J.
Export Dept.: The Carpenter Steel Co., Port Washington, N.Y. "CARSTEELCO"

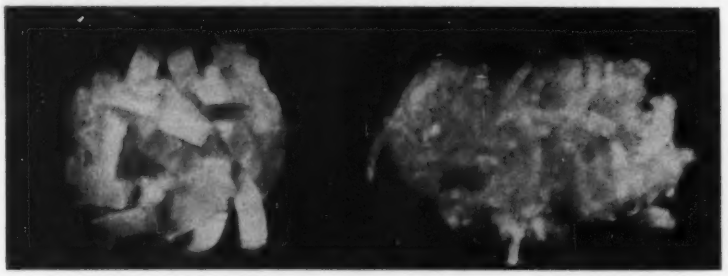
Carpenter

THE U.S. NEEDS YOUR STEEL SCRAP NOW

STAINLESS TUBING & PIPE

- guaranteed on every shipment

 For more information, write direct or use Reader Service post card.



Cut Synthetic Fibers for Staple with the efficient TAYLOR-STILES STAPLE CUTTER

Shown above is nylon sliver cut to ¼" lengths (left) and 1/8" lengths (right).

Shown left, is a Taylor-Stiles staple cutter, cutting nylon sliver to staple lengths.

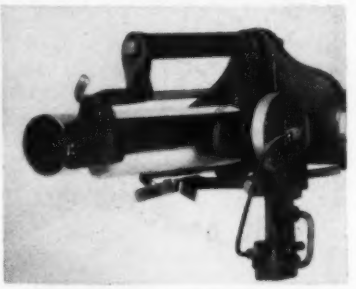
Taylor-Stiles cutters are made for every textile cutting nylon sliver to staple lengths. where.

Write for description of the Taylor-Stiles Textile cutter for your specific requirements.

TAYLOR-STILES & COMPANY
15 BRIDGE STREET
RIEGELSVILLE, NEW JERSEY

RUGGED in design
LIGHT in weight!
MILTON GIVES YOU TRUE DIMENSIONAL STABILITY without objectionable deflection or distortion!
it takes GOOD BEAMS to make good warps!
PROVEN IN SERVICE
warping unprecedented yardages of monofilament; fine denier, low turn nylon; and rubber yarns
WITHSTAND EXCESSIVE PRESSURES
MILTON NYLON & RUBBER TRICOT BEAM
Forged, heat-treated aluminum alloy heads and barrels permanently joined with continuous heliarc welds.
THERE'S A MILTON BEAM FOR EVERY APPLICATION . . .
permanent mold TRICOT BEAMS
SECTION BEAMS
Write for Bulletin 49-A for complete information
MILTON MACHINE WORKS, Inc.
DESIGNERS — ENGINEERS — MANUFACTURERS
MILTON, PENNA.

Guider-Roll Air Valve Reduces Cloth Oscillation



SUPERAIR CLOTH GUIDER equipped with a new air valve reduces the time interval that is needed for guider rolls to open and thus gives more accurate guiding of fabric coming through. Manufacturer is Guider Roll & Service Co., Box 3747, Peninsula Sta., Daytona Beach, Fla.

The shorter time interval needed reduces the oscillation or side-to-side movement of the cloth. The improved sensitivity is made possible by placing the valve at the end of a 4-in. right-angle stem instead of close to the bearing as is usually done.

Another feature of the new valve is air economy. The valve is practically air-tight. It operates on an Oilite bearing 2 in. long.

The manufacturer has arranged to supply the valve for use on guiders already in operation as well as on Superair guiders.

Circle T-30 on Reader-Service Card

frames. The new assembly uses Rulon as a bearing material.

Rulon withstands abrasion and is described as "slippery throughout, from outer skin to inner core." Advantage claimed over the usual antifriction bearings is that Rulon's initial cost is far lower, it can be replaced easily at moderate cost, and bearings of Rulon "will last until they have paid for themselves at least ten times over." Rulon never requires lubrication.

Boss diameter of the new top roll has been reduced to $3\frac{3}{8}$ in. to allow use of a thicker cot wall and thus provide more cushion. This arrangement gives a larger area to grip the fibers and possibly allows some weight reduction.

The diameter of the hardened-steel arbor is $\frac{3}{8}$ in. The new model has nearly the same deflection as the old-time $\frac{7}{16}$-in. cast-iron arbor yet is easier to turn (or, in the reverse, harder for the saddle to grab or brake) and travels fewer feet per minute. Thus less heat is generated, and there is less wear on the saddle bearing.

Roll-picking and cleaning are substantially reduced, as elimination of oiling does away with sticky surfaces. Besides eliminating lubrication on saddles and cap bars and reducing the amount of roll-picking and cleaning

DOW CORNING

Silicone Notes

ON FABRIC TREATMENTS

Why is DeCetex 104 Superdurable?

Recent investigations* prove that a DeCetex treatment completely envelops each individual fiber in a tightly bonded, flexible silicone surface. To establish this fact, a DeCetex-treated acetate suiting fabric was soaked for 24 hours in acetone. Photomicrographs were then made of the thin-walled silicone tubes that remained after the acetate fibers had been dissolved. Further enlargement of the inner surfaces of silicone tubes even showed impressions due to the characteristic surface irregularities of the fiber.

High resistance to oxidation, to temperature extremes and to a variety of chemicals is inherent in all silicone products. That's why these water repellent silicone tubes withstand repeated exposure to cleaning agents.

As further proof of the exceptional durability of DeCetex 104 as a water repellent treatment for fabrics we report spray-rating tests on four commercially treated fabrics subjected to three dry cleanings. These fabrics were cleaned with a standard load in a 30 x 30 Stoddard solvent washer using a dry cleaning soap and pre-spotter solution. The load was run with the soap and pre-spotter solution for 25 minutes without filter circulation. Samples which were not rinsed were removed, extracted and dried. The balance of the load was then rinsed for 20 minutes in fresh solvent with filter circulation. Samples were extracted and dried at 145°F for 25 minutes before conditioning and testing.

Effect of Commercial Dry Cleaning on DeCetex-treated Fabrics

Treatment	Acetate Spun Fill Filament Warp	50/50 Acetate and Spun Rayon	Acetate Spun Fabric	Acetate Filament Warp and Fill
	Spray Ratings			
None	100	100	100	100
1 Cleaning—no rinse	80	90	80	90
1 Cleaning & rinse	90	90	80	90
3 Cleaning & rinses	80	80	80	80

Resistance of DeCetex treated fabrics to laundering was also tested. Test samples were laundered in a reversing washwheel with 0.1% soap in water at 120°F for 40 minutes followed by 5 rinses at 100°F.

Laundering Durability of 50/50 Rayon Acetate Fabrics Commercial Treated with DeCetex 104

Sample	Percent Silicone Pickup	Spray Ratings Original	Wash 1	Wash 2	Wash 3
1	.86	100	90	90	90
2	1.10	100	90	90	90
3	1.00	100	90	90	90
4	1.20	100	90	100	90

In addition to superdurable water repellency, DeCetex imparts several other important characteristics to the fabric, including a desirable hand and excellent resistance to water-borne stains. DeCetex-treated fabrics seldom show mark-off as a result of the finish. They have superior resistance to wear; improved sewability, increased tear strength, greater stability and wrinkle resistance.

DeCetex is easily applied, dried and cured with conventional equipment. No corrosive chemicals are involved; no washing or neutralizing is required and treated fabrics remain odorless even after aging. For more information or for technical assistance, call our nearest branch office or write for Data Sheet AJ-5.

DOW CORNING SILICONES

*Fortess et al, Resin Finishing of Acetate Fabrics, Atlantic City meeting, A.C.S. Sept. 1952.

DOW CORNING CORPORATION

Atlanta
Chicago
Cleveland
Dallas
Los Angeles
MIDLAND, MICHIGAN
New York
Washington, D.C.

In Canada: Fiberglas Canada Ltd., Toronto Great Britain: Midland Silicones Ltd., London

with DOW CORNING ANTIFOAM A

Use productive capacity now wasted on foam; cut processing time with Dow Corning Antifoam A, the silicone defoamer that works at concentrations in the range of:

3 ppm ♦ in recirculating cooling brines
2.5 ppm ♦ in bottling soft drinks
2 ppm ♦ in varnish cooking
200 ppm ♦ in textile resin backings
0.4 ppm ♦ in steel pickling baths

♦ Effective at remarkably low concentrations in a wide variety of foamers, Dow Corning Antifoam A compound is harmless physiologically. It can be used as received, mixed with one of the foaming ingredients or dispersed in a solvent for industrial applications.

♦ Equally versatile and more easily dispersed, Dow Corning Antifoam AF Emulsion is a water dilutable defoamer containing 30% Antifoam A. Originally designed for use in the food processing industries, Dow Corning Antifoam AF Emulsion has a wide field of industrial usefulness.

see for yourself!

mail coupon TODAY for **free sample**

DOW CORNING SILICONES

Dow Corning Corporation
Midland, Mich., Dept. AJ-5A.

Please send me data and a free sample of—

☐ Dow Corning Antifoam A or
☐ Dow Corning Antifoam AF Emulsion

NAME_____

COMPANY_____

ADDRESS_____

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STYLERS' PARADISE

No restriction as to size of batch, color, or prompt delivery. Our dyeing does not kill the lustre.

Package dyed acetate yarn, regular and thick & thin—we can supply yarn or commission dye your yarn.

Jobbers of natural rayon and acetate yarns

★

Atlantic Rayon
CORPORATION

Dyers and Converters of Synthetic Yarns for All Industries

Plant at Providence 1, R. I.

NEW YORK REPRESENTATIVE

Empire State Bldg.

Fifth Ave., New York 1

★

necessary, the new combination results in as much as 33% less power consumption than regular top rolls and saddles and decreases the number of breaks per 1000 spindle hours.

The design of the front saddle permits immediate installation on the frame without the additional purchase of new back saddles or stirrups if they are not desired or needed. Top rolls can be buffed and cots changed on the same equipment and by the same methods now in use. The thicker-walled cots allow more buffing, lengthen cot life, and reduce this cost factor.

Both cots revolve in unison rather than singly, as is the case with anti-friction rolls. Reduction in starting torque reduces the number of ends down after a lay-over or a doff.

The new front-saddle-and-roll combination, exclusive of cots, is priced at 40¢ per spindle (3-in. gauge). As a tryout, the manufacturer offers to equip one side of any spinning frame with the new front saddles and rolls with no charge or obligation to the mill.

Circle T-31 on Reader-Service Card

Indicating Viscometer Measures Solutions Without Recording

A NEW INDICATING INSTRUMENT for solution-measurement applications, where a permanent record is not required and where the price for recording equipment cannot be justified, has been brought out as a supplement for its line of recording viscometers by Norcross Corp., 247 Newtonville Ave., Newton 58, Mass. Designed for either panel or wall mounting and furnished with a 6-in. dial, the new unit can be supplied as an indicator-controller for some automatic control applications.

The indicator is used with the company's basic measuring elements, which operate on the principle of measuring the time required for a piston to fall a given distance through the solution being measured.

The indicator can be remotely located any reasonable distance from the measuring element.

Circle T-32 on Reader-Service Card

GOODBYE TO "SUPPLY TROUBLES"

Enlarged plant insures you immediate delivery of

VINOL polyvinyl alcohol

Are you a user of Polyvinyl Alcohol? You can be sure of an adequate supply—now possible through the enlarged facilities of The Colton Chemical Company, exclusive producers of VINOL Polyvinyl Alcohol. Uniformity and high quality of VINOL Polyvinyl Alcohol are rigidly controlled. You can depend on VINOL.

VINOL Polyvinyl Alcohol is extensively used in the Adhesive, Textile, Paper and Packaging Industries. VINOL is non-gelling, white, free-flowing, fast-dissolving and uniform.

SPECIFICATIONS

VINOL Polyvinyl Alcohol is available in two grades:

	FH-400 (medium grade, fully hydrolyzed)	FH-500 (high viscosity, fully hydrolyzed)
Hydrolysis	98.5—100%	98.5—100%
Insolubles (in water)	1.0% max.	1.0% max.
Volatiles	5.0% max.	5.0% max.
Ash	2.0% max.	2.0% max.
pH	6 - 8	6 - 8
Viscosity (4% in water)	20 - 30 cps	35 - 50 cps
Gel characteristics	Non-Gel	Non-Gel
Color	White	White

THE MARK OF CCC QUALITY

For samples and information, write Dept. 334

THE COLTON CHEMICAL CO.
1545 E. 18TH ST. CLEVELAND 14, OHIO

Manufacturers of VINOL Polyvinyl Alcohol—VINAC Polyvinyl Acetate in Solid, Solution and Emulsion Form—Phenol Formaldehyde Solutions

HERE'S WHAT WE MEAN BY *Quality* IN "Buffalo" AIR CONDITIONING UNITS

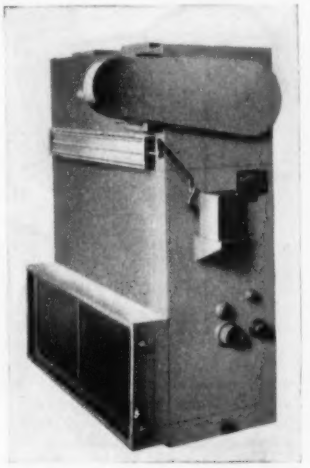
HIGH EFFICIENCY FANS

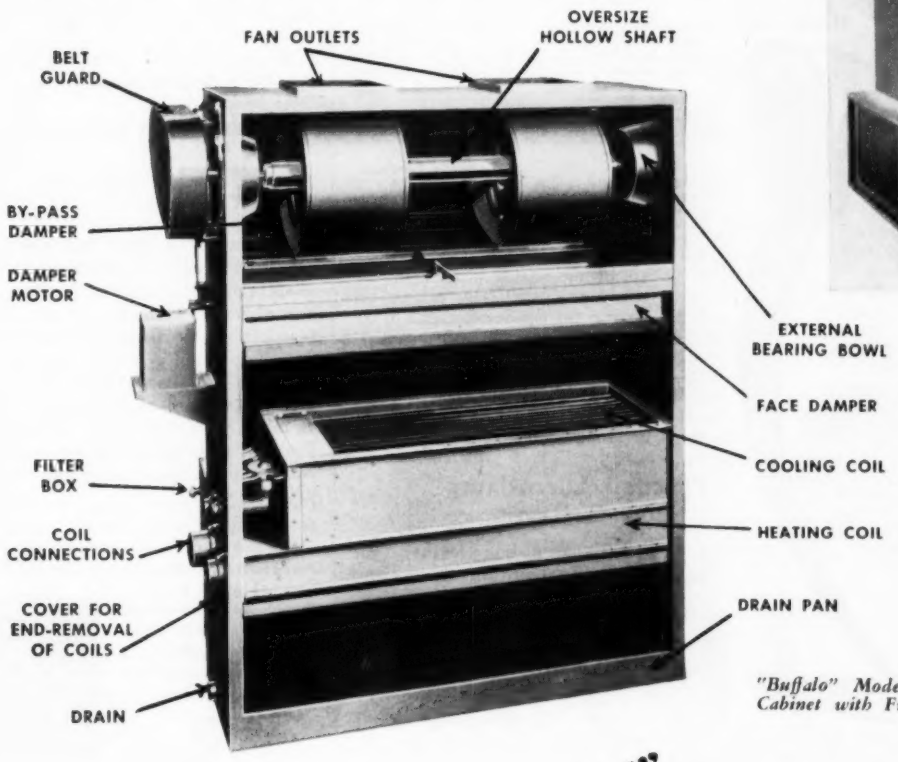
Effective air conditioning depends on effective distribution of the conditioned air. This is one reason why "Buffalo" put so much care into the design of its new mixed-flow fans with the bellmouthed housings. Quieter and more efficient than forward-curve designs, they have extremely stable performance over a wide range of capacity. A further development, the oversize hollow shafts, assure perfect balance and non-pulsating operation, eliminating the critical speeds of long shafts.

QUALITY COOLING COILS, HEATING COILS, DAMPERS

The coils are the well-known lightweight Aerofin, in standard trade sizes,—assurance of satisfactory service. For exact control, "Buffalo" offers motor-operated automatically controlled by-pass dampers in four styles to suit the installation.

Other Important Features To Consider "Buffalo" units have removable panels for accessibility and easy maintenance. They may be broken down into sections for moving into your building through standard doorways. Parts are interchangeable. External bearing boll permits lubrication from outside. For these and other quality features that mean dependable air conditioning at moderate cost, write now for Bulletin 3703A.





"Buffalo" Model "G" Type "VPC" Cabinet with Front Panels Removed

75TH

FIRST FOR FANS

"Buffalo" FORGE COMPANY

184 MORTIMER ST. BUFFALO, NEW YORK

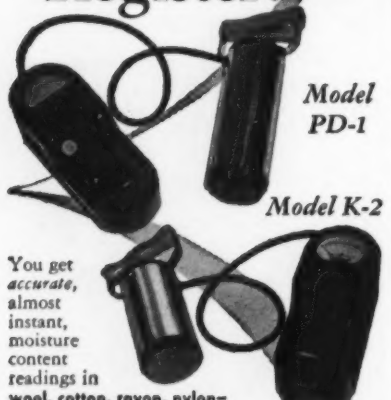
PUBLISHERS OF "FAN ENGINEERING" HANDBOOK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont. Sales Representatives in all Principal Cities

VENTILATING | PRESSURE BLOWING | AIR CLEANING | COOLING | AIR TEMPERING | HEATING | INDUCED DRAFT | FORCED DRAFT | EXHAUSTING

For more information, write direct or use Reader Service post card.

Test moisture content *in* 3 *seconds* with Moisture Register!



Model PD-1

Model K-2

You get *accurate*, almost instant, moisture content readings in **wool, cotton, rayon, nylon—practically any type of textile**—when you use Moisture Register Model PD-1 or Model K-2.

Either model gives you "on-the-spot" readings with guaranteed accuracy. They're simple to operate, require no technical knowledge or skill, weigh only 6 pounds, easily portable.

Model PD-1 tests textiles in loose or compressed forms with 3" penetration. Model K-2 tests cones, beams, rolls and similar forms.

ONE YEAR GUARANTEE!

Use one of these instruments **FREE** for 10 days. No obligation! Prove for yourself that Moisture Register will help you maintain higher standards, iron out production headaches, add to your reputation as a manufacturer of quality products. Fill out coupon, mail today!

ELECTRONIC MOISTURE REGISTER

MOISTURE REGISTER CO.
1510 W. Chestnut St.,
Dept. TW, Alhambra, Calif.

☐ Please send me, *without obligation!* for 10-day free trial, Model.....for use on.....

Enclosed find purchase order to cover trial period.

NAME
TITLE
COMPANY
STREET
CITY
STATE

☐ Please send me information on Moisture Register for use on .....

Round Table

(*Continued from page 165*)

mill. The flat comb was placed at the back of the card with the Thompson roll removed. The waste stripped from the flats was permitted to fall evenly on the picker lap being fed in. Results showed that much of the good fiber in the strips could be recovered without affecting the quality of the product.

Analyses of the picker lap and the flat strips showed this:

	Lap	Flat strips
Good spinnable fiber	93.6%	70.8%
Trash and fuzz fiber	6.4%	2.92%
Maximum length of fibers	1.25 in.	1.18 in.
Average length of fibers	0.24 in.	0.75 in.
Average length of fibers	0.24 in.	0.75 in.
Equal to classification	1 in.	15/16 in.

Waste tests made to compare the regular and reworked-strips cards showed a considerable increase in lickerin and fly waste on the reworked cards:

	Regular cards	Reworked cards
Flat strips	2.7%	0.0
Lickerin and fly waste	0.92%	1.64%
Total	3.62%	1.64%
Waste saving (3.62—1.64)		1.98%
Card production (80 hr.)		880 lb.
Waste saving per card		17.4 lb.
Cost of cotton per pound		$0.30 app.
Resale value of waste		$0.18 app.
Savings per pound		$0.12 app.
Savings per card (80 hr.)		$2.09 app.

Let's see now the yarn quality and operating behavior of the reworked-strips product compared with the regular work.

	Regular	Reworked
Nep count, card web (100 sq. in.)	23	24
Yarn break factor (30s warp)	1655	1679
Yarn appearance (Gov't. Stand.)	B	B
Spinning ends down per M spin. hr.	42.81	44.10

From these experiments, there appear to be worthwhile savings possible on certain types of products. This project certainly deserves further development in our experimental and research laboratories.

BOSS CARDER

New Bedford, Mass.

Planned Loomfixing

(*Continued from page 103*)

d. Pickers and box leathers are kept in good condition to prevent jerk-backs.

e. Shuttles are bought with a $\frac{3}{8}$-in. groove in the bottom surface to prevent waste yarn from being dragged into the cloth.

f. Weavers keep the accumulation of loose filling ends pulled from the lay.

Loomfixers Are Kept Informed

Osage is able to keep seconds low and production high because the loom fixers are well trained. Style changes result in changed work methods for loomfixers, and, therefore, the loomfixers have to be trained constantly.

Head loomfixers work out new loom settings for new styles of cloth and

TENSION LINKAGE

WHAT'S THAT ?

Some designers have been asking us what we mean by the term "tension linkage." We use it to describe any chain application in which the linear movement of the chain is not continuous in direction. The predominant feature of a tension linkage application is that the chain need not be formed as an endless chain belt.

There is a wide variety of possible tension linkage applications.

here's an example

Reposition of a shaft that has been rotated through a limited angle. The shaft is turned clockwise (as shown in the illustration) during some operation of the associated equipment. The resulting compression of the spring provides the energy necessary to return the shaft to its original position. In many cases of this type, operation is frequent and high shock loads are encountered, so *chain* is the answer.

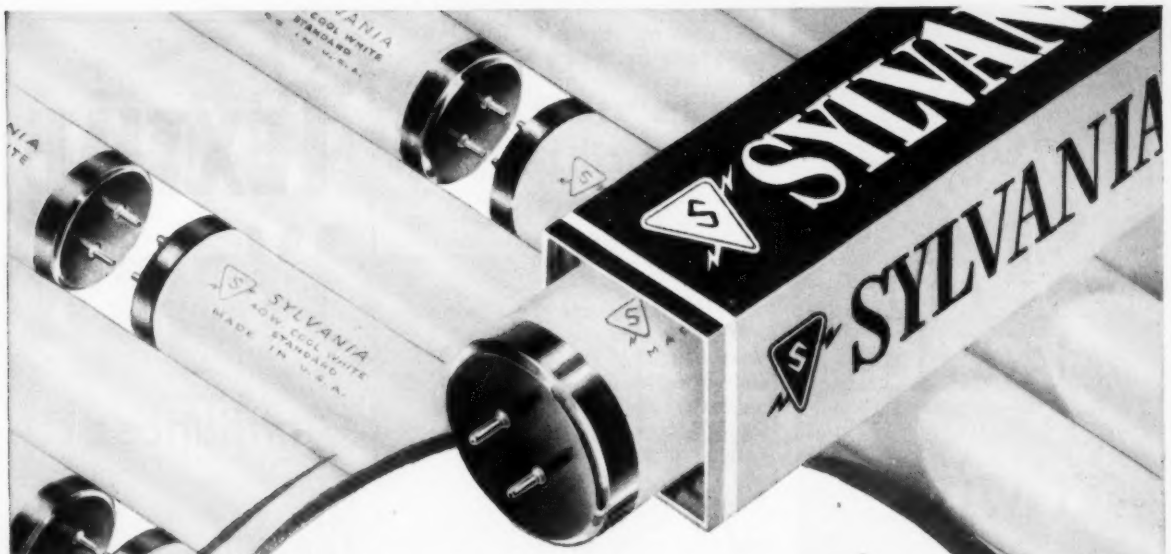
Our Bulletin No. 51-10 contains complete details on why Baldwin-Rex® Roller Chains, Leaf Chains and Block Chains are ideal for tension linkages. It also contains application examples and tables of weights, strengths and dimensions. Write Chain Belt Company, 346 Plainfield St., Springfield 2, Mass., for it today.

BALDWIN-REX ROLLER CHAINS

A PRODUCT OF

Chain Belt COMPANY OF MILWAUKEE

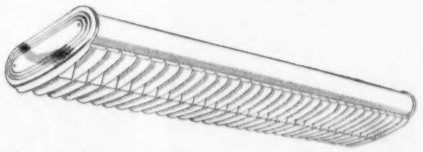
District Sales Offices or Distributors in principal cities throughout the world.



Save Lighting Dollars

and enjoy better Light with Sylvania Fluorescent Lamps. Read this money back guarantee.

Try 24 Sylvania Fluorescent Lamps of any popular type. If they don't give more light and maintain color and brightness for a longer time than any other brand, send them back with your Certificate of Assurance and your money will be refunded.



Sylvania Fluorescent Fixtures, too, are completely guaranteed. This covers every Sylvania lamp, starter, and part for an entire year. For full details see the Sylvania Lighting Contractor who displays the emblem at right.

QUALIFIED LIGHTING CONTRACTOR AUTHORIZED SYLVANIA SALES SERVICE

SYLVANIA

Sylvania Electric Products Inc., 1740 Broadway, New York 19, N. Y.

In Canada: Sylvania Electric (Canada) Ltd., University Tower Building, St. Catherine St., Montreal, P. Q.

LIGHTING • RADIO • ELECTRONICS • TELEVISION

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PA.

also work out settings to make better cloth on fabrics already being run. They record the new settings and standardize them for specific styles of cloth.

Loomfixers on the first, second, and third shifts meet with a head loomfixer periodically on Saturday mornings and go over new loom settings so that all loomfixers know the correct settings and so that they will all set the looms the same way.

Correct loom settings for each specific fabric and a program of loomfixer training that shows loomfixers how to fix looms closely has resulted in better cloth and more cloth at Osage Mfg. Co.

Some of the fabrics run by Osage are:

- A 2x2 twill made from staple yarns of 70% viscose, 20% dull acetate, and 10% nylon finishes at 13.5 oz. The filling is mixed at the loom by using two shuttles.
- Four colors of acetate nub—gold green, red, and white—form 12% of the filling yarns of another fabric, which finishes at 9 to 9.5 oz. and is 60 in. wide.
- Dull acetate and dull viscose warp and filling yarns make a 2x2 check. The cloth is finished 60 in. wide at 9 to 9.5 oz. Predetermined loom settings control the quality.

Books of Interest

Processing Techniques For Mills Using Nylon

NYLON TECHNOLOGY by Karl H. Inderfurth; McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y.; cloth, 335 pages, $6.50.

At long last the industry has a book that gives the ordinary reader, through data gathered from many sources, the latest methods used to process nylon through the various phases of textile manufacturing.

Practical chapters include hints on how best to process nylon on the three major carding and spinning systems; on how best to warp, beam, slash, quill, and weave nylon; on how to handle nylon on the major types of knitting machines; and on how nylon is best dyed, printed, and finished. Other chapters are devoted to the preparation of nylon by the throwster and to the processing of nylon tire cord and nylon sewing thread.

Some of the chapters are not the ideas

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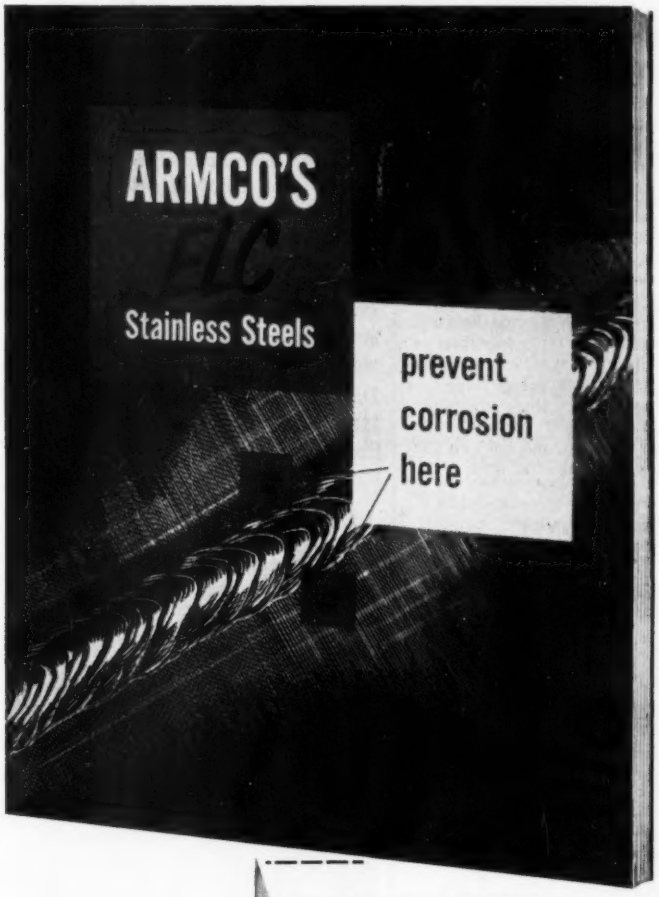
- IMPROVE EFFICIENCY
- INCREASE PRODUCTION
- SOLVE PROBLEMS
- MAKE BETTER PRODUCTS

See Page 197 For Details

new data / On Armco's Extra Low-Carbon Stainless Steels



If you process synthetic yarns or manufacture textiles that expose your equipment to highly corrosive conditions, you'll find it worthwhile to read a new 8-page booklet just published by Armco.

Titled "Armco's ELC Stainless Steels," it tells about the properties and advantages of these special extra low-carbon grades in welded wet processing equipment. Their low carbon (.03% maximum) eliminates the danger of corrosion alongside weld areas.

Higher concentrations of corrosive bleaches and dyes in the production of synthetic materials are prompting many textile mills to specify higher alloys of stainless steel for their new equipment.

One finishing and dyeing mill, for example, specified Armco 18-12 Mo ELC for all new equipment because the company anticipates changing to a higher concentration of corrosive chemicals in the production of synthetics. Their chief chemist believes that only by using Type 316L can he be sure the equipment will stand up under the new conditions.

Be sure to consult your equipment manufacturer about Armco ELC Stainless Steels the next time you plan new equipment. Meanwhile, send for your copy of this booklet which describes the advantages of these special grades. Just fill out and mail the coupon.

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of a single individual but the consensus of the best-known methods of processing nylon.

The author solicited, received, and acknowledges the tremendous aid given by many technicians and companies in preparing this book. As a result of the putting of many heads together, the scope of the work is both broad and deep, as well as personalized and directly usable in a mill.

A Workable Answer To Employee Problems

PROFIT SHARING, The Keystone of Industrial Peace, by The Council of Profit Sharing Industries, First National Tower, Akron, Ohio; paper, 136 pages, $2.50.

This 8½x11-in. paper-bound booklet is a transcript of the proceedings at the fifth annual conference of the profit-sharing industries' national organization at Philadelphia last November. Some of the pages make excellent reading for textile men—especially those in which George Baldanzi tangles with one or two other members of the group on the importance of unions in an industrial profit-sharing setup.

Other sessions included three simultaneous round-table discussions (for small, medium, and large business), and talks on the essentials of any profit-sharing plan.

Comparative Survey Of Fiber Characteristics

TEXTILE FIBERS, YARNS AND FABRICS, by Ernest R. Kaswell; Reinhold Publishing Corp., 330 W. 42nd St., New York 36, N. Y., cloth, 450 pages, $11.

This technical volume for textile chemists, physicists, and engineers was developed from the fiber and fabric data originally prepared for The Wool Bureau. Using wool as a yardstick for comparing fiber and fabric properties, the author has expanded the original work to make a complete study of the physical and chemical behavior of all natural and synthetic fibers, including the newer man-made fibers.

Characteristics covered in the first section of the book include stress and strain; energy absorption; elastic modulus; repeated stress; and chemical, thermal, biological, and environmental resistance.

In the second section, the author explains in detail the relationships of fiber properties to such fundamental fabric requirements as abrasion resistance, crease retention, wrinkle resistance, hand, thermal conductivity, and air and water permeability.

The book is an ideal reference for textile men in research and development work.

Correction

On page 218 of the February, 1953, issue, the price of the book *Warp Knitting Technology*, by D. F. Paling, was given erroneously. We are advised by the publisher, Harlequin Press Co. Ltd., that the price for this book in American dollars is $2.60, including postage. TEXTILE WORLD regrets the error made in converting shillings to dollars.

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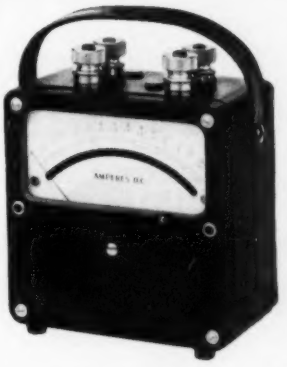

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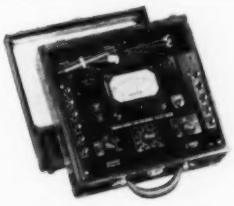
has special damping to dampen out heavy surges when checking loom motors. Scale calibrated 1/2/5 amperes. Models also available for all a-c and d-c testing and plant maintenance needs.

Light Meters—compact Model 703 illustrated widely used for quick measurements in mills and offices—measures all types of lighting direct. Also Model 614 with wide range of light values, and range-changing switch.

Pocket-Size Testers—compact, low cost test instruments available as Ohmmeters — Insulation Testers — Volt-Ohmmeters — and Volt-Ohm-Milliammeters which have well selected group of ranges to cover most electrical servicing needs.

Panel and Switchboard Instruments—a complete line of instruments in all types, sizes and ranges required for switchboard and panel needs . . . including d-c, a-c power frequencies and radio frequency, rectifier types and DB meters.



Industrial Circuit Tester—Model 785—a multi-range, multi-purpose, ultra-sensitive analyzer, for laboratory and industrial checking of electrical and electronic circuits. Has 28 practical scale ranges; measures d-c and a-c voltage, d-c and a-c current, and resistance. Accessories available to extend ranges. Compact and portable; furnished in either oak or steel case.

Clamp Volt Ammeters—(Model 633, Type VA-1) for convenient and rapid measurement of a-c voltage and current without breaking the circuit. Jaws take insulated or non-insulated conductors up to 2" diameter. Safe, rugged, versatile. Also available as a-c clamp ammeter, without voltage ranges.

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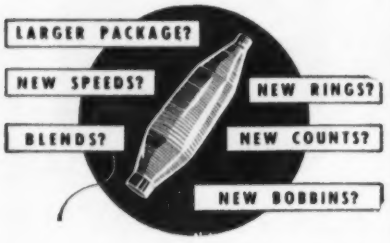

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Questions AND Answers

Inferior Soap and Wax Can Cause Size Problem

Technical Editor:

We have trouble getting our soft white thread to the proper shade. Enclosed are two samples of thread: one is a sample from the market and one is our sample. Our sizing formula is:

2% potato starch
2% paraffin wax
1% white soap
2% coconut oil (9640)

The size formula is in line with formulas in common use. Upon desizing, both samples appear to have the same cast of white; so the raw cotton is apparently the same before sizing.

The problem seems to be connected with the sizing. The bluish tinge could come from an inferior grade of paraffin wax or from a soap with "optical bleach." Many commercial soaps contain fluorescent dyes in small amounts.

Possible solutions:

1. Use only a highly refined paraffin wax
2. Use soap without "optical bleach"
3. If these two possible solutions fail, add ½% (based on the weight of solids in the size) of whiting such as lithopane or titanium dioxide.

Nylon Mesh for Shoes Is Treated With Resin Finish

Technical Editor:

How is plain-weave nylon-mesh fabric stiffened for use in shoes? (9642)

Scouring of the fabric is done in the conventional manner, and the dyeing is done with acetate dyes and dyebecks. The shoe mesh is padded in open width with a melamine-formaldehyde resin and cured in a hot-air pin tenter frame. The curing is done at approximately 350° F. for 45 sec. Some manufacturers use a light neutralization to remove any residual acid catalyst left on the mesh cloth during padding.

The resinous finish is varied, depending on the stiffness desired. Between 6 and 20% resin is used to ob-

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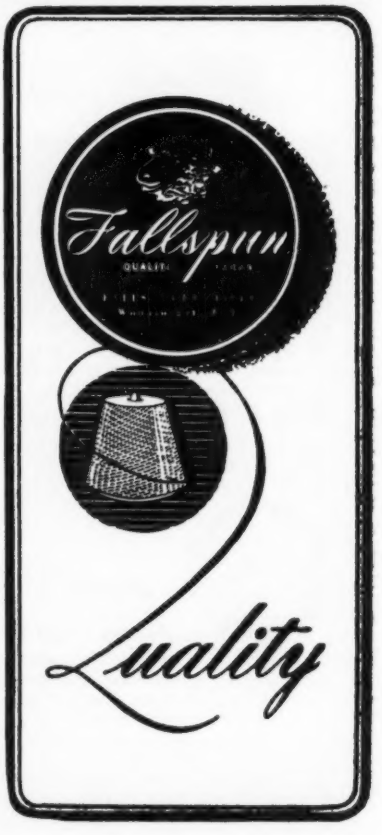

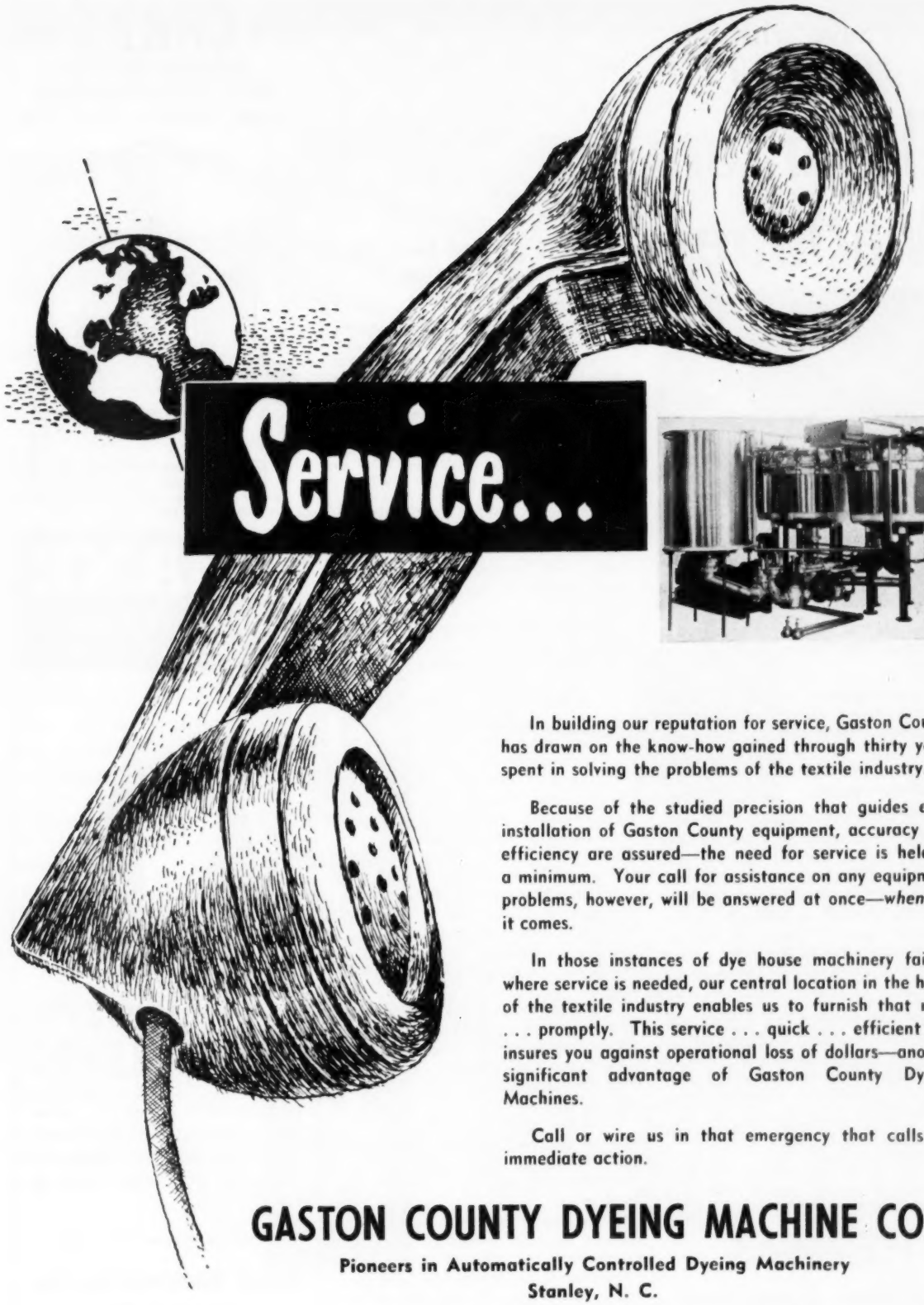

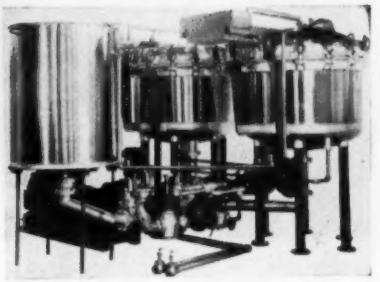

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Because of the studied precision that guides each installation of Gaston County equipment, accuracy and efficiency are assured—the need for service is held to a minimum. Your call for assistance on any equipment problems, however, will be answered at once—*whenever* it comes.

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The following statement appeared in the March 10th Textile World's "Sales Signals":

"These integrated machines you see are the latest thing in clothroom equipment," says a mill superintendent. "With this arrangement, two men can do the work formerly done by several more people.

"Here's the way it works—This man places a roll of cloth here and stitches it to the end of the roll that has just run over. The stitched rolls of cloth go through this three-tier scray where a surplus of cloth is built up. Then the cloth goes through a vertical brusher connected to the scray. From there, the cloth enters a shearing machine.

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You, too, can operate your clothroom this new way.

Write today for full details of Hermas Integrated Clothroom Machines.

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HAWTHORNE, NEW JERSEY

tain the various finishes desired by the shoe trade. The resin formulas also include a buffer, a catalyst, and usually ammonia to assure the pH.

In addition, a durable water repellent is sometimes used to modify the hand of the fabric. This treatment gives a slicker and greasier finish and tends to increase the flexibility of the resin coating. This addition is usually in the range of 10%.

Weaving Sateens Face Up Is the Buyer's Choice

Technical Editor:

European mills weave drills, sateens, etc., face down, but we understand American mills weave these fabrics face up. For example, a European mill would weave a five-harness sateen four down and one up; an American mill would weave it four up and one down.

Europeans think their method keeps warp breakages to a minimum. Why do American mills weave face up? (9639)

The specifications of the buyer or converter usually determine whether the fabric is woven face up or face down. The weaving advantages and disadvantages are fairly well counterbalanced.

Some of the advantages of the two methods are:

Filling-face sateen—one harness up, four harnesses down:

1. Better control of warp yarn because four harnesses are held by cams and only one harness by a spring
2. Less warp yarn breakage because four sheets of yarn form the tight, or bottom, line of shed and one sheet forms the slack, or top, line of shed
3. Better control of such cloth defects as slubs, kinky filling, jerked-in filling, misdraws, double threads, etc.
4. Smoother, more-even fabric on the back, or filling, side

Warp-face sateen—four harnesses up, one harness down:

1. Better, more-pronounced twill in cloth
2. Easier on the loom because four harnesses are being held up by springs and only one held down by a cam
3. Fewer breakdowns caused by broken harness straps, jack straps, harness springs, etc.
4. Smoother beat-up because only one sheet of warp yarn forms the tight, or bottom, line of shed and four sheets form the slack, or top, line of shed

If the change is made from a five-harness warp-face sateen to a filling-face sateen, the order of the harness breaks must be reversed to get the same twill line. If the harness is breaking 1-3-5-2-4 for the 4-up, 1-down warp-face twill, the filling-face twill should break 5-3-1-4-2.

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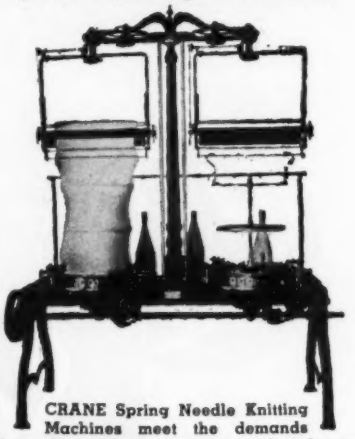

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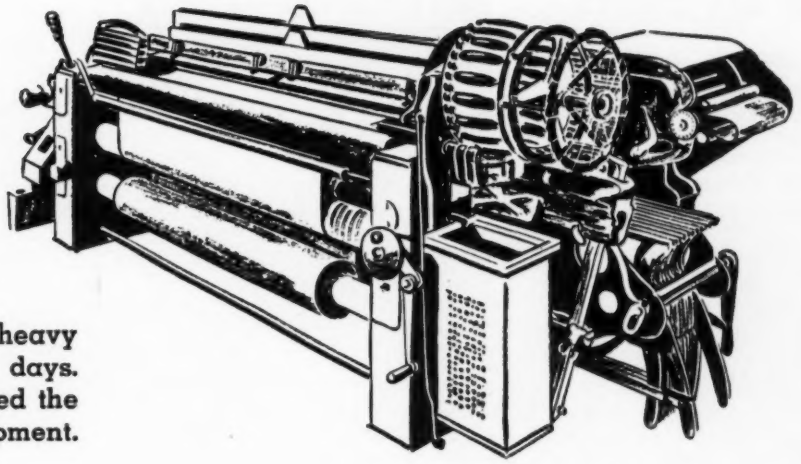

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They find Saurer looms are ahead in

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That means

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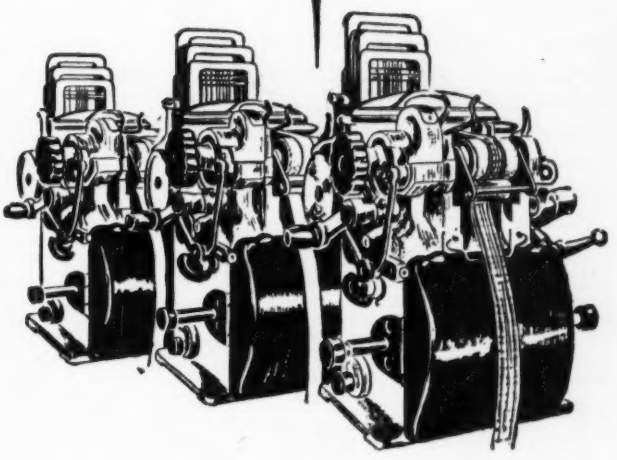

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Approximately 15 years ago Jantzen Knitting Mills Inc., replaced line shafts in its Knitting Department and selected Sterling Slo-Speed Electric Power Drives to drive each machine individually, reports Mr. C. A. Fischer, Maintenance Engineer. Each Slo-Speed was mounted in, and as an integral part of, the machine, thus saving floor space. Over this period maintenance has been hardly more than occasional lubrication. We are pleased to recommend Sterling Slo-Speed Electric Power Drives.

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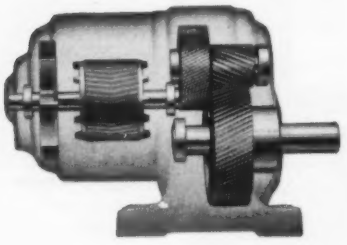

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Mill Maintenance

Eight Enemies of Electric Motors

If your electric motors aren't all new ones, some information furnished by Allis-Chalmers Mfg. Co., Milwaukee, Wis., will help you to operate them with a minimum of attention and with low repair costs.

The motor enemies are:

1. Dust

Dust settles on motor housings, windings, slip rings, and commutators —and works its way into the bearings.

On windings, dust works as a layer of insulation and confines heat until the insulation reaches dangerous temperatures. Dust also plugs ventilation spaces to interfere with proper cooling.

On slip rings and commutators, dust acts both as an abrasive and as an insulator. It multiplies wear and blocks the full passage of current.

Once inside the bearings, dust is as harmful as sandpaper to the highly polished surfaces.

The most serious threat that dust holds to the life of a motor is to fill the open spaces in the windings. When filled with dust, the whole wound section becomes a sponge to soak up harmful oil, moisture, and acid fumes.

2. Stray Oil

Since oil fights friction, it is often called the lifeblood of motors. And inside your bearings, that's exactly what it is. But outside the bearings, oil is strictly poison to electric motors.

Just as dust soaks up stray oil, stray oil soaks up dust. When both oil and dust cover a commutator, good commutation is prevented; the faces of brushes become glazed and packed with dirt, and harmful sparking results.

Oil also harms commutators by deteriorating the mica insulating segments between bars.

Oil is extremely harmful to the insulation on windings. Once a winding is thoroughly soaked with oil, the motor is in immediate danger of burning out or breaking down, and the soaked winding has to be rewound.

Oil is most dangerous to a motor when it is combined with dust in the windings to produce a greasy, gummy substance. The ventilation is stopped, the wires are under continuous attack

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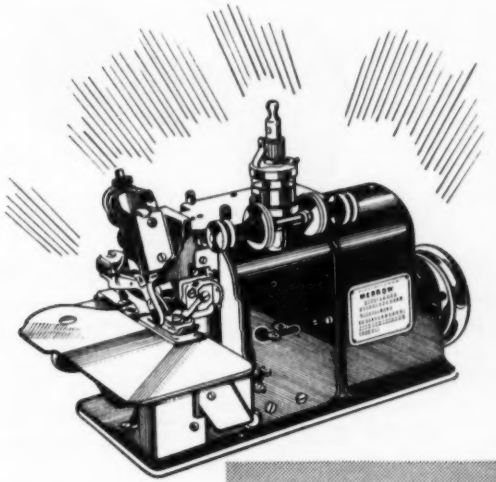
Merrow Class A Machines perform overseaming and trimming operations simultaneously. They form the one, two, or three-thread overseam or edge finish, or the three-thread tight needle thread seam.

These machines, used on most kinds of knitted and woven fabrics and plastics, are produced in many styles. By interchanging a few parts, each machine may be adapted to a great variety of operations on many different fabrics.

Smooth, high speed operation insures maximum production. Merrow quality and design minimizes "down time".



Write for brochures covering the Class A Machine. Free upon request.

TRADE MARK REG

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MACHINE COMPANY

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CURVED TOP

Hampers are conveyed up and down directly on their own wheels

Lower Your Overhead with a

WEHLE HAMPER CONVEYOR

Conveys merchandise in hampers, crates, boxes, baskets, with casters, or with wheels attached.

LOWERS OVERHEAD — Cuts labor down to a fraction of the cost required by other methods.

ADAPTABLE — This special Wehle Conveyor lends itself to many adaptations. Wehle Conveyors are custom built and engineered to fit your requirements. We can speed up your operations.

We also manufacture all steel construction spacesaver conveyors to convey merchandise in cartons from floor to floor. No belts.

CONVEYORS

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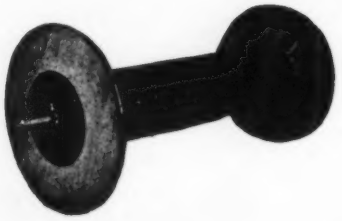

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WHIP ROLLS	TOP WORKMANSHIP
HIGH SPEED WARPER BEAMS	TOP QUALITY TOP DELIVERY

WILLIAM McCASKIE, INC.

Wooden Textile Specialties

FORGE ROAD WESTPORT, MASS.

from oil, metallic dust is held in the "gum," and the motor is in constant danger of shorting or grounding.

3. Moisture

The general aim of effective maintenance of electric motors is to keep motors completely dry.

If a motor cannot be placed in a dry place, moisture lodged in the motor should be removed as quickly as possible for two reasons:

a. Moisture soaks into and softens insulation slowly, and it is often possible to remove it before any damage is done.

b. Evaporated moisture is pure water and is at its least dangerous stage when it first condenses in a motor. Every extra hour that moisture stays in a motor gives the water more time to absorb harmful compounds and to become an active destructive agent.

4. Friction

No wear can take place within a bearing if the surfaces are smooth and properly lubricated. A film of oil keeps the wearing surfaces apart.

In actual practice, bearings often receive an insufficient supply of oil or oil that is wrong for the motor; grit gets into the oil and produces scraping; or a too-heavy load is put on the bearing, and the film of oil breaks down.

Preventing these conditions is one of the main jobs of motor maintenance.

5. Misalignment

Sprung or broken shafts, burned-out bearings, and overload failure are examples of motor damage caused by misalignment.

Misalignment is caused by settlement of foundations, heavy floor loading, excessive bearing wear, and other factors.

Alignment must be maintained if motors are to be maintained.

6. Vibration

Excessive vibration is destructive to motors. Vibration in a driven machine, careless servicing, loose motor-mounting bolts, and worn motor bearings can cause excessive motor vibration.

Vibration shakes motor parts and electrical connectors loose, crystallizes metals, and multiplies frictional wear.

Excessive vibration should always be tracked to its source and its cause eradicated.

7. Overload

A motor should never carry too great a mechanical load. Overloading can be caused by an obstruction in a driven machine (tight bearings, etc.), by excessive friction within the motor itself, or by trying to obtain greater

Keep your **BOBBINS** *in* **TOP CONDITION** *at* **LOWER COST** *with the*

No. 88 NASH *Automatic*
BOBBIN REFINISHER

• This time-tested machine was born of a need . . . designed to keep bobbins in perfect condition with a highly polished surface, and assure a *better run-off of yarn.* The Nash 88 has won highest praise from users everywhere. It assures uniform, smooth-surface reconditionnig with a saving of labor cost.

HERE ARE SOME OF ITS FEATURES:

- Handles most types of flanged bobbins . . . easily adjusted to range of shapes and sizes.
- Separate burnishing assembly produces a highly-polished surface of uniform quality.
- Abrasive action takes place on barrel portion inside flanges and top radius of flanges.
- Its high speed (10 bobbins per minute) requires only minimum set-up time.
- Nash quality means fine performance and low maintenance cost.

Nash also builds Automatic Bobbin Sanders, Automatic Quill Polishers, Automatic Round Stock Sanders, and Special-Purpose Machinery.

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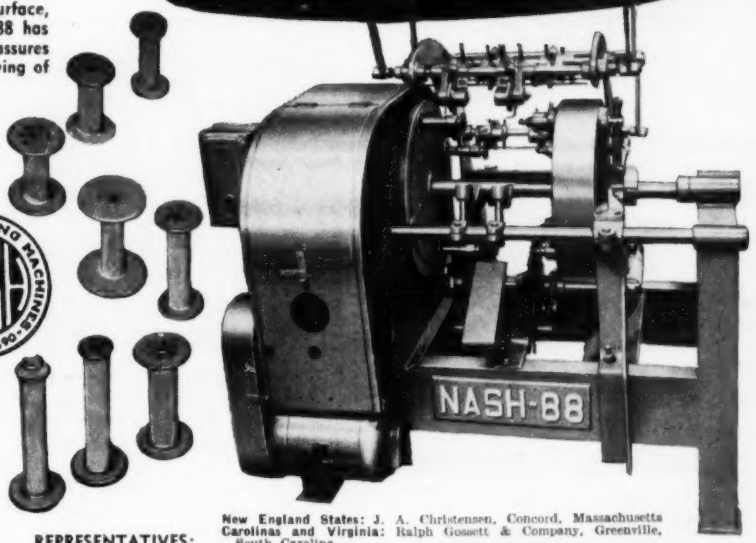

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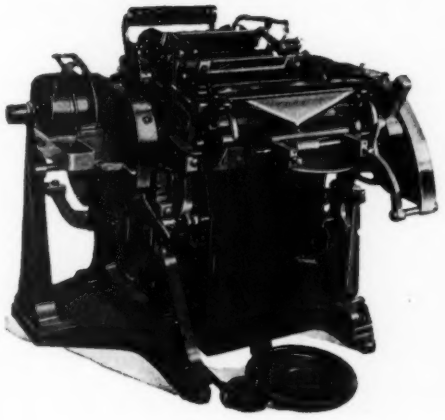

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OUTSTANDING for ready accessibility of all operating parts (including cylindrical comb) and for remarkable cleanliness of product. Settings made quickly.

Also other worsted preparatory machinery

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CDF TEXTILE NEWS

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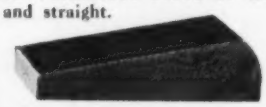
KNIFE GUIDES Available in C-D-F Diamond Vulcanized Fibre or Celoron. Strong and straight.



PARALLEL PLUGS New and better! Made from molded Celoron, plug needs no lubrication, lasts for years, will not delaminate, splinter, fracture, or soften.

CLOTH ROLL BLOCKS
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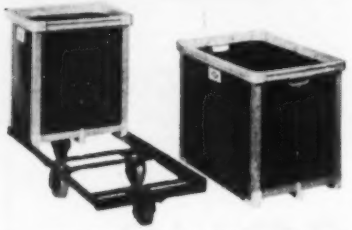
DOFFING TRUCKS



Two durable C-D-F Diamond Vulcanized Fibre boxes combined with a strong, easy-running truck. Smooth surfaces inside and out. C-D-F Fibre is lightweight, rugged, scuff-proof . . . lasts for years without maintenance. Low cost, attractive, amazingly strong and practical. Raised steel platform doffing trucks are also available; cross cleats in the undercarriage greatly strengthen the angle iron frame in this type truck.

PROMPT, EFFICIENT SERVICE FROM SPARTANBURG!

This new C-D-F plant and warehouse stores a wealth of interesting and vital plastics: Sturdy fibre sheets, a wide thickness range of Celoron gear stock, bins filled with loom parts and couplings. Here you can see the complete C-D-F receptacle line and feel the quality construction. And a C-D-F sales engineer is as near to you as your telephone. Call him today.

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Call Spartanburg 3-6397 for DILECTO and DIAMOND FIBRE materials handling equipment . . . trucks, boxes . . . loom parts . . . top-speed shipments of CELORON silent gear blanks . . . friendly service from your C-D-F sales engineer.

output from the driven machine than the motor is capable of carrying.

If one of these conditions causes the current in a motor to exceed its nameplate current rating, motor heating will result and the insulation will be "fried," soldered connections melted, and bearings burned out.

8. **Underload**

Although the penalties are less severe, underloading an induction motor is just as clearly improper as overloading it.

Underloaded motors lose torque and are apt to overheat. Underload usually causes serious inefficiency to both the motor and utility lines.

Tackle your eight motor enemies, and you will find it easy to keep your motors humming.

Useful Accessories For Textile Mills

▶ **To request further information on any item, please use the card in the Reader-Service dept.; refer to the number at the end of the item concerned.**

New Lift-Truck Differential

Both purchasers and present users of Towmotor Model LT60 lift trucks can now benefit by the extra traction provided by a special differential designed to give full power to both drive wheels under any operating conditions. Called the NoSpin differential, the unit has proved effective in over 150,000 highway trucks and similar vehicles.

In addition to maintaining equal drive-wheel speeds, the differential compensates for differences in wheel speeds when they are turning in either direction.

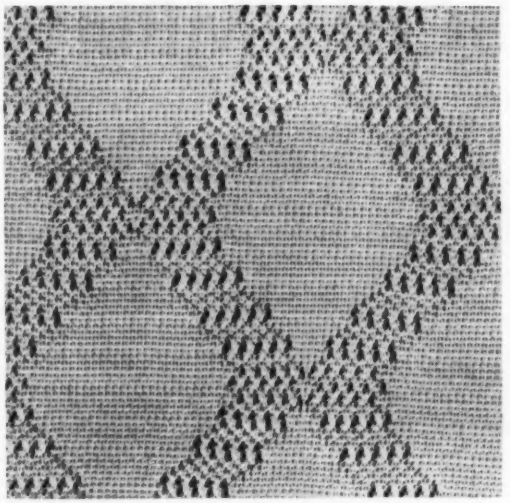
The unit is manufactured by Towmotor Corp., 1226 E. 152nd St., Cleveland 10, Ohio, as original equipment at additional cost on Towmotor LT60 lift trucks. The unit is also interchangeable with the standard LT60 differential. (U-1)

Integrated Lamp Reflector

A new type of light reflector that screws right into any standard light socket has been announced by Abolite Lighting Div., Jones Metal Products Co., West Lafayette, Ohio. The Jiffylite has a two-piece plug and socket. The lamp screws into the reflector, which in turn screws into the light socket. No tools are needed for installation.

The inside surface of the unit is finished in titanium white, the lifetime porcelain

CORRECTION



A portion of the pattern setup for this tricot fabric, shown at the upper left of page 83 of the April issue of TEXTILE WORLD, was omitted.

The warp threading should be:

Back bar 29 in ||||||||||·|·|·|·|·

Front bar 29 in ·|·|·|·|·||||||||||

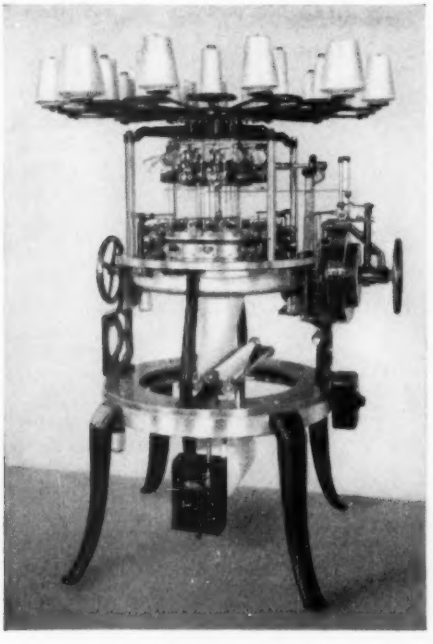
Where do these People Buy?

In the consumers' natural buying haunts, you are competing for the attention of people eager for new experiences, new products.

SALES and PROFIT WISE, what does this mean to You?

It stands to reason that in these frantic competitive markets, it is the highly *enterprising* apparel producers who know that mass markets are composed of individuals constantly seeking the new, the unique, the "something special". Enmasse, they cast their "ayes" for your products, when you deliver these special goods.

TO BE SPECIFIC . . . . . .



The "something special" for you, so you can produce the *unique* for the consumer, is this Wildman Cylinder Needle Revolving Fabric Machine — economical, efficient. Available in several styles for plain, tuck, float stitching. Pattern, chain type for automatic stitch changes. Fabric production: underwear, outerwear, sportswear, beachwear, dress, night-wear, foundation, children's, stockinet. Belt or individual motor drive. Inquire today for complete details.

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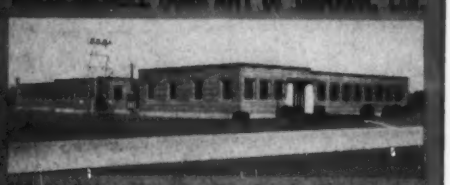

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STEHEDCO and SOUTHERN Products
"Weave the World's Needs"

enamel, for maximum light reflection. According to the manufacturer, Jiffylite cuts consumption of electricity by permitting the use of lower watt lamps than ordinarily used.

The outside surface is finished in cream-colored porcelain. The unit is ruggedly built with a rolled edge for added strength. Depth of the reflector is 3 in. Reflectors are available in two sizes—10- and 12-in. diameters. (U-2)

Concrete-Floor Dust Control

To aid in the control of dusting concrete floors, United Laboratories, Inc., 16801 Euclid Ave., Cleveland 12, Ohio, has developed a product known as Transvar 266 that is said to have shown remarkable results in binding together tiny dust particles that are actually a part of the concrete surface. Such dusting is the first sign of a surface disintegration; if it is allowed to continue, it can result in serious and costly floor problems.

Transvar 266 is applied by brush or mop. It is a thin liquid, light amber in color; but it does not alter the appearance of the surface, because of its deep penetration of the pores. No surface film is formed. (U-3)

Lightweight Pipe Threader

With a total weight of only 26 lb., the Port-A-Pony pipe threader, a featherweight portable power unit for threading pipe in the shop or in the field, has been developed by Thread-Ezy Mfg. Co., 325 N. Shiawassee St., Corunna, Mich.

The new threader ultilizes the ring-gear principle to turn dies at the most efficient cutting speed required to thread ¼- to 4-in. pipe. All popular types of hand die stocks are adaptable to the unit. Dies can be seated and locked in place in a matter of seconds to assure efficiency.

Proper speed of operation is assured by the ½-hp., 110-v. a.c. or d.c. reversible electric motor, which also removes the unit from finished threads with a flip of the toggle switch. (U-4)

Textile Calendar

AIEE, Textile Div., conference, Sheraton-Plaza Hotel, Boston, Mass., May 1.
Industrial Waste Conference, Purdue University, Lafayette, Ind., May 4 to 6.
AATT, monthly meeting, Builders Club, New York, May 6.
Phi Psi Fraternity, 50th annual convention, Penn-Sheraton Hotel, Philadelphia, Pa., May 7 to 9.
AATCC, Hudson-Mohawk Sect., Jack's Restaurant, Albany, N. Y., May 8.
International Cotton Standards Conference, Washington, D. C., May 13.
AATCC, Northern New England Sect., Andover Country Club, Andover, Mass., May 15.
Materials Handling Exposition, Convention Hall, Philadelphia, Pa., May 18 to 22.
AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., May 22.
AATCC, R. I. Sect., Providence Engineering Society, Providence, R. I., May 22.
LTI Alumni Assn., annual reunion, Boston and Lowell, Mass., May 22 and 23.
AATCC, South Central Sect., Patten Hotel, Chattanooga, Tenn., May 23.
Textile Institute, annual conference, Llandudno, North Wales, May 25 to 30.
American Society for Quality Control, Textile Div., Convention Hall, Philadelphia, Pa., May 27 to 29.
ASQC, Textile Div., one-day technical session, Convention Hall, Philadelphia, Pa., May 29.
South Carolina Textile Mfrs. Assn., annual convention, Sea Island, Ga., May 28 to 30.
Canadian International Trade Fair, Exhibition Park, Toronto, Ont., Canada, June 1 to 12.
AATT, monthly meeting, Builders Club, New York, June 3.
AATCC, Piedmont Sect., Mayview Manor, Blowing Rock, N. C., June 12 and 13.
STA, annual convention, Mayview Manor, Blowing Rock, N. C., June 18 to 20.
ASTM, annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., June 29 to July 3.
Mass. Institute of Technology, summer research course, MIT, Cambridge, Mass., July 6 to 31.
Gordon Research Conference on Textiles, Colby Junior College, New London, N. H., July 13 to 17.
International Exposition of Fabrics, Fibers, Finishes, and Yarns, Waldorf-Astoria Hotel, New York, July 27 to 31.
U.S. Testing Co., summer refresher course in textiles and testing, Hoboken, N. J., July 27 to Aug. 14.
AATT, monthly meeting, Builders Club, New York, Sept. 2.
Fiber Society, fall meeting, LTI, Lowell, Mass., Sept. 10 and 11.
AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Sept. 11.
AATCC, Piedmont Sect., Hotel Charlotte, Charlotte, N. C., Sept. 12.
AATCC, national convention, Conrad Hilton Hotel, Chicago, Ill., Sept. 17 to 19.
AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Oct. 2.
AATT, monthly meeting, Builders Club, New York, Oct. 7.
Packaging Institute, annual forum, Hotel Statler, New York, Oct. 12 to 14.
Textile Machinery and Accessories Exhibition, Belle Vue, Manchester, England, October 14 to 24.
North Carolina Textile Mfrs. Assn., annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 15 and 16.
AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Oct. 23.
AATCC, R. I. Sect., Providence, Engineering Society, Providence, R. I., Oct. 23.
AATT, monthly meeting, Builders Club, New York, Nov. 4.
AATCC, Northern New England Sect., LTI, Lowell, Mass., Nov. 6.
AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Nov. 6.
AATCC, Mid-West Sect., Hotel Bismarck, Chicago, Ill., Nov. 7.
TRI, annual meeting, Commodore Hotel, New York, Nov. 12 and 13.
AATT, monthly meeting, Builders Club, New York, Dec. 2.
AATCC, Northern New England Sect., Faculty House, MIT, Cambridge, Mass., Dec. 4.
AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Dec. 4.
AATCC, R. I. Sect., annual meeting, Sheraton-Biltmore Hotel, Providence, R. I., Dec. 4.
AATCC, South Central Sect., Patten Hotel, Chattanooga, Tenn., Dec. 5.
AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Dec. 11.

1954

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Jan. 15, 1954.
ACMI, annual meeting, Jung Hotel, New Orleans, La., April 22 to 24, 1954.
American Textile Machinery Exhibition, sponsored by American Textile Machinery Association, Atlantic City Auditorium, Atlantic City, N. J., April 26 to 30, 1954.
AATCC, national convention, Atlanta, Ga., Sept. 21 to 23, 1954.
Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 9, 1954.

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Does Have Its Points!

The points when considering appropriate FRAME CONSTRUCTION built for the fabrics they were intended for, added up are;

1. STRENGTH AND RIGIDITY — To take any punishment high speed production inflicts.
2. LIGHTNESS IN WEIGHT — Provides ease of handling plus the strength required.
3. Constructed so that all wood parts are made from selected seasoned lumber free from knots; all metal parts being of rust resisting metal and designed for fool proof function of the frame.
4. Smooth face — no parts protruding — no rub, no cut.
5. Finger Tip controlled Heddle Bars of the finest tempered steel for quick release.

STEHEDCO FRAMES will always be the Frames for high speed production, because they were designed for it. There is a STEHEDCO FRAME constructed for the material you are weaving equipped with Stehedco patented Drawtex Heddles.

Consult your nearest Stehedco or Southern Field Engineer for the information you require.

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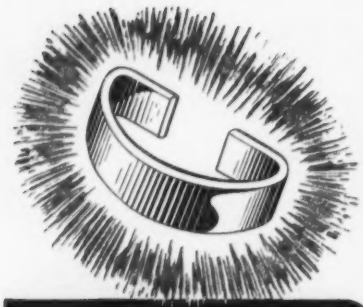

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WELCOME TRAVELERS!

The welcome sign for Dary Ring Travelers has been up in spinning and twisting rooms for well over 50 years!

Dary users know they can depend on steady performance regardless of the tough tests they give Dary Travelers.

So, welcome your Dary Ring Traveler man the next time he stops by!

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CRAWFORD RHYMER, BOX 2261, GREENVILLE, S. C.

News OF THE MONTH

COTTON VARIETIES ARE IMPROVING

Cotton produced in the United States today is strikingly superior in two important qualities—fiber length and fiber strength—to that grown only a decade ago, say plant scientists of the U. S. Dept. of Agriculture. The improved fibers make stronger, more easily processed yarns and fabrics.

This information comes from a survey by J. E. Hite, cotton agronomist for the Bureau of Plant Industry, Soils, and Agricultural Engineering, in which he compared the two fiber properties of the commercial cottons most widely grown in 1939-41 with those of 1949-51.

The survey shows that new varieties with increased fiber length and fiber strength are being grown across the Cotton Belt. The average length of fibers (as measured on a Fibrograph) of nearly 12-million bales produced in the earlier period was 0.98 in. The average index of fiber strength, as indicated on a Pressley strength tester, was 6.78.

Ten years later the average fiber length of nearly 14-million bales was 1.04 in., and the index of average fiber strength was 7.23.

The plant scientists see the 10-year gains as only the beginning of cotton-fiber improvement that can be accomplished through research.

IMPORT CUT URGED

The U. S. Tariff Commission has been urged by the Textile Workers Union of America, CIO, to increase to 45% the duty on those woolen and worsted fabrics whose imports have exceeded 5% of domestic production during the past three years. The union stated that imports of such fabrics have soared from 0.6% of domestic production in 1947 to 6.6% in 1952. The union claims that this difference in percentage was a significant factor in the slowing up of production in American mills during the past two years.

The trade agreement of 1947 reduced ad valorem duties on woolen and worsted goods from 35 to 45% to a flat 25%. However, the United States at that time reserved the right to increase the rate to 45% if imports exceeded 5% of domestic production.

WOOL CONSUMPTION IN 1952

There was no appreciable change from 1951 to 1952 in the relative proportions of total fiber consumption by American woolen and worsted manufacturers. Virgin wool last year accounted for 57% of the total fibers used as compared with 58% in 1951, the Wool Bureau reports.

In fabric production, there was a gain of 14% for wool in civilian apparel fabrics, while there were losses of 36% in government fabrics and 23% in nonapparel fabrics. The third and fourth quarters reversed the downward trend for wool, however.

Men's-wear fabrics gained 62% and 54% in favor of wool during the last two quarters respectively, compared with the corresponding quarters of 1951, according to an analysis of the new rate of orders received by the 75 firms that account for about 50% of the national production.

The figures suggest a small rise in the use of wool in the first quarter of this year over the fourth quarter 1952 volume.

DACRON FOR CANADA

A $20-million plant is to be erected at Millhaven, Ont., Canada, for the production of Terylene polyester fiber, the British equivalent of Dacron, by Canadian Industries Ltd., subsidiary of the British firm, Imperial Chemical Industries Ltd. Building of the plant will be under the direction of the Canadian firm.

Imperial Chemical Industries Ltd. also licenses E. I. du Pont de Nemours & Co., Inc., to produce the same fiber in the United States under the name of Dacron.

Financing of the new plant will be Canadian. The poundage of fiber to be produced, as yet unannounced, is expected to take care of Canada's needs along this line.

NAWM PANEL DISCUSSION

A panel discussion on "The Place of Man-Made Fibers in the Field of Woolen and Worsted Yarns and Fabrics" will be a feature of the 88th annual meeting of the National Assn. of Wool Manufacturers on May 7 at

We make over 18,000 different weights, sizes and styles of travelers and can recommend the right traveler for your special needs. Bring your problems to us. We'll gladly suggest the proper traveler to perfect your spinning — whatever fibres you are running. National Ring Traveler Company, Pawtucket, R. I., and Charlotte, N. C.

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OLDEST AND LARGEST MANUFACTURER OF RING SPINNING AND TWISTING TRAVELERS IN THE UNITED STATES

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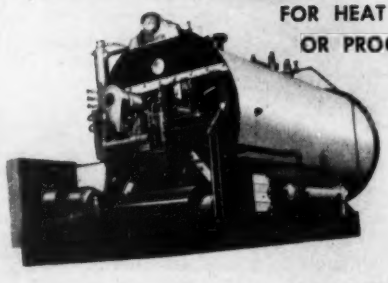

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Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 518

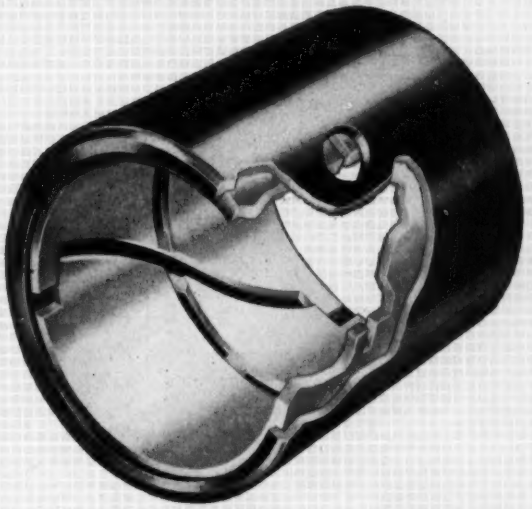
SUPERIOR COMBUSTION INDUSTRIES, Inc.

Factory: Emmaus, Pa.

Exec. Offices: Times Bldg., Times Sq., New York N. Y.

SUPERIOR STEAM GENERATORS

NYLINED* BEARINGS



... with Smooth, Tough, DuPont NYLON

Solve Many Bearing Problems

• RESILIENCY RESISTS POUNDOUT • PERMIT DRY OPERATION • MINIMIZE ABRASION FAILURES • SILENT OPERATION • LOWER FRICTION • SUPERIOR CORROSION RESISTANCE • OPERATE IN LIQUIDS • ELIMINATE FRICTION OXIDATION • LIGHT WEIGHT • DAMP MECHANICAL VIBRATION • EXTREMELY COMPACT • CLOSE FITS • NON-CONTAMINATING • LOW COST • LONGER LIFE • LESS MAINTENANCE • BEARING SURFACE INSTANTLY REPLACEABLE

*NYLINED Bearings have a highly engineered thin liner of DuPont Nylon, designed to bring bearing users the many benefits of Nylon as a bearing material by solving most of the limitations surrounding its use.

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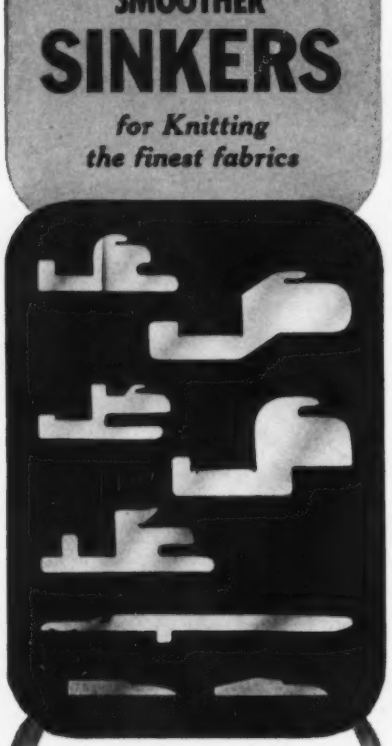
Also Manufacturers of BALL BUSHINGS... The Ball Bearing for Linear Motions

DEPEND ON
IVES
FOR LONGER WEARING
SMOOTHER
SINKERS
for Knitting
the finest fabrics



IN ADDITION TO
Sliders; Sinkers; Jacks; Guides; Sley, Looper and Transfer Points . . . we *also manufacture* all known types of Spring Beard Needles for circular, full-fashioned and tricot knitting machines.

Complete line, all gauges and styles of Needles, Guides, Sinkers and Sley Points for Reiner, Avisco and Whitin Tricot machines. Also equipped for complete casting and squaring service for Tricot machines.

THE LOYAL T.
IVES
COMPANY, INC.
Established 1872
NEW BRUNSWICK, N. J.

NEWS *of the Month*

the Waldorf-Astoria Hotel in New York. Dr. Milton Harris of Harris Research Laboratories, Washington, D. C., will be moderator of the panel.

Representatives of firms producing the newer chemical fibers in commercial quantities have been invited to take part in the panel. Each will be given time to discuss his product. The meeting will then be thrown open to questions.

On the panel for the question period will be several woolen and worsted manufacturers who are NAWM members, as well as fiber men from other organizations such as the Army Quartermaster Corps and The Wool Bureau.

SHEETS FOR CANCER DRESSINGS

In a sales campaign tied in to benefit the American Cancer Society, Pacific Mills will credit housewives for 50¢ toward the purchase of a Pacific contour sheet for each old sheet turned in during the week of May 11 to 16. The old sheets will be used for cancer dressings.

In each department store that cooperates in the campaign, the cancer organization will maintain a booth. Workers in the booths will receive old, whole or repaired, clean sheets in return for a certificate of credit worth 50¢ toward the purchase of a pair of the mill's contour sheets.

The mill will redeem the certificates during the month of June.

REVISED COTTON STANDARDS AVAILABLE

Practical forms of the revised cotton standards that become effective August 15 of this year will be available for purchase after the Universal Cotton Standards Conference is held in Washington May 13 to 16.

The practical forms will include 12-sample official boxes and 6-sample guide boxes of all grades of white and tinged cotton contained in the revised standards, except the grades Good Middling White and Good Middling Tinged, which will be descriptive grades.

The 12-sample boxes will cost domestic purchasers $10 per box f.o.b. Washington, and foreign purchasers $12 per box delivered. The six-sample boxes will cost domestic purchasers $5 a box f.o.b. Washington, and foreign purchasers $6.50 a box delivered.

WARP KNITTERS STUDY TESTS

A test-methods committee on warp-knit fabrics named by the Underwear Institute and the warp-knitters group of the National Federation of Textiles met recently and named three task groups to study tests for shrinkage, breaking strength, and analysis of yield.

Leo J. Feuer of William Carter Co. was appointed head of the group to study shrinkage-in-laundering testing methods; Ralph L. Stimmel of American Viscose Corp. Textile Research Department, head of the group to study breaking-strength test methods; and O. W. Hampton of Robbins Mills, head of the group on methods for determining analysis of yield.

EUROPEAN TEXTILE SITUATION

In Western Europe, textiles must again be regarded as a declining industry, the Secretariat of the UN Economic Commission for Europe declared in its recent *Economic Survey of Europe.*

In a chapter devoted to textiles, it argues that the recession of 1951-52 marked a decisive turning point for the textile industry; that the pre-war tendency for textile exports to contract has now reasserted itself; and that, because of lower demand at home and for exports, the levels of production reached in 1951 are unlikely to be equaled for some years to come.

For the textile industries of East European countries, on the other hand, the problem is not one of overcapacity but of increasing production in order to provide for higher textile consumption standards, the survey states.

SUMMER COURSES AT MIT

A four-week special summer program in the principles of textile research will be given from July 6 to 31 at Massachusetts Institute of Technology, Cambridge, Mass.

The program, under the supervision of Edward R. Schwarz, Professor of Textile Technology, will deal largely with the role of fundamental research in textiles as it relates to the interpretation and handling of laboratory finding.

"This involves," according to Professor Schwarz, "presentation and discussion of the newer techniques for physical and optical measurements; the tabular and graphical presentation of data; and applications of statistical methods such as rank correlation, significance testing, quality control, and variance analysis."

In addition, particular attention will

TEXTILE WORLD

Reprints Available

▶ **Reprints of the following articles run in past issues of TEXTILE WORLD are available at the prices indicated. To order, write or use the coupon below, stating the titles of the reprints desired. Enclose check or money order payable to TEXTILE WORLD.**

SYNTHETIC-FIBER CHART — **25¢ each, 15¢ in lots of 20 or more**
The latest (1951) edition lists the 12 main types of synthetic fibers and reports their physical and chemical properties. Comparative tables on properties of cotton and wool are included. The chart also gives figures on synthetic-fiber consumption, lists all commercially available synthetic continuous-filament yarns and staples, and gives other important data.

TEXTILE BIBLIOGRAPHY — **25¢ each, 15¢ in lots of 20 or more**
An up-to-date listing of the important English-language books on textile technology. Twelve page folder lists more than 1,400 items in 20 categories and includes a directory of publishers.

COTTON FLOW CHART — **25¢ each, 15¢ in lots of 20 or more**
An illustrated step-by-step process chart of cotton manufacturing from bale to finished fabric. Both principal and alternate flows are shown.

WOOL FLOW CHART — **25¢ each, 15¢ in lots of 20 or more**
Worsted-yarn manufacturing by Bradford, French, and American systems; woolen-yarn manufacturing; weaving and finishing processes for six typical fabrics are shown and illustrated in sequence. Principal and alternate flows are shown.

CONTINUOUS-FILAMENT FLOW CHART — **25¢ each, 15¢ in lots of 20 or more**
Principal and alternate step-by-step processes in handling continuous filament yarns from the case of yarn to the finished fabric (including tire cord) are shown.

KNITTING FLOW CHART — **15¢ each, 10¢ in lots of 20 or more**
The sequences of processes for the subdivisions of the knitting branch of the industry—women's hosiery, men's full-fashioned hosiery, half hose, and knit underwear and outerwear (circular and warp)—are shown and illustrated.

FELT FLOW CHART — **15¢ each, 10¢ in lots of 20 or more**
Manufacture of roll felts, sheet felts, and felt wheels is shown in step-by-step order.

COTTON-FIBER TABLE — **25¢ each, 15¢ in lots of 20 or more**
Revised (1953) edition shows fiber properties and manufacturing performance of the 11 varieties of cotton that make up more than 80% of the U. S. cotton grown. Data given enable mills to save money by selecting the best fiber for the end product.

SHRINKAGE TABLES — **25¢ each, 15¢ in lots of 20 or more**
These tables permit quick determination of ½ to 25% shrinkage, covering pieces from 50 to 100 yd.

SAFETY (March, '53). 8 pages. 15¢ each, 10¢ in lots of 20 or more
IN-PLANT FEEDING (Aug. '51). 10 pages. 15¢ each, 10¢ in lots of 20 or more.
SETTING A WORKLOAD (Oct. '51). 8 pages. 15¢ each, 10¢ in lots of 20 or more.
AMERICAN TEXTILE-MACHINERY EXHIBITION REPORT (July, '50). 56 pages. Free.
CENTRALIZED LUBRICATION OF TEXTILE MACHINERY (May, '49). 12 pages, 25¢ each, 15¢ in lots of 20 or more.
HOMOGENIZATION IN WARP SIZING (Nov., '49). 8 pages. 25¢ each, 15¢ in lots of 20 or more.
STANDARDS DEPARTMENTS (March, '50). 8 pages. 25¢ each, 15¢ in lots of 20 or more.
NEPS . . . AND HOW TO CONTROL THEM (May, '52). 16 pages. 25¢ each, 15¢ in lots of 20 or more.

The following reprints are 10¢ each, 7¢ in quantities of 20 or more.
TEXTILE WORLD's Finishing Symbols (Jan., '49)
Yield Chart Gives Knitting Data (July, '49)
New Dye Technique Shows Maturity of Cotton (July, '47)
Let's Knot—and Do It the Right Way (June, '46)
Ramie—an Impartial Report (Dec., '45)

EDITOR
TEXTILE WORLD
330 West 42nd St.
New York 36, N. Y.

Please send the following TEXTILE WORLD reprints. My check or money order is enclosed.

Quantity	Reprint Title	Cost Each	Total Cost

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Street .....

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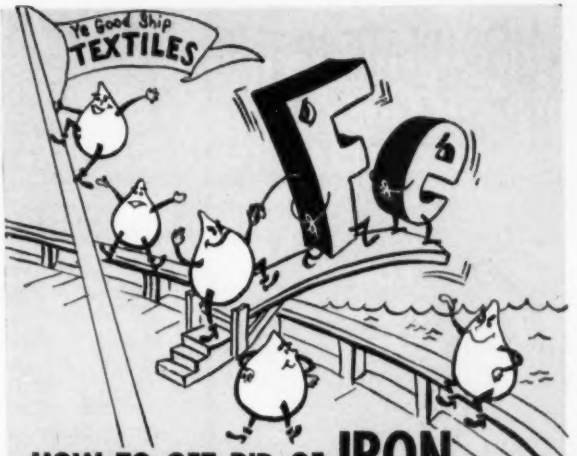

HOW TO GET RID OF IRON

... Versene®

IRON — BANE OF PROCESSORS

In textile processing metallic contamination does things to fabrics and fibers that always spoil goods and cost money. Iron causes yellowing in white goods, prevents level dyeing, causes shade changes, spotting, streaking and is often responsible for crocking. Minute traces of copper, zinc, lead and other metals cause other problems of equal seriousness.

VERSENE ELIMINATES IRON

Versene-T, made especially to inactivate and solubilize iron and other metallic salts in concentrated caustic solutions, gets fibers and fabrics shades whiter. A *Versene* (Regular) rinse after viscose coagulation increases whiteness and tensile strength by removing lead, zinc and other metal impurities. *Versene* also extends the life and persistency of peroxide both in the bath and on the cloth. With synthetic and other detergents, *Versene* acts synergistically to get fabric and fibers cleaner. Because it removes the cause of metallic ion contamination, *Versene* can cut your costs, save yards of goods and miles of fibers. It is well worth investigation.

VERSENE QUALITY GUARANTEED

Made only under F. C. Bersworth processes and patents, the *Versenes* are guaranteed for uniformity of quality and chelating (complexing) power. Exceptionally stable at high temperatures throughout the pH range, they are available in liquid or dry form. Write Dept. D today for samples and Technical Bulletin #2. Chemical counsel on request.

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Textile Manufacturers

LUBRIPLATE Lubricants have won acceptance in the textile industry because even with speeds up to 25,000 R.P.M., they have exceedingly long life and do not break down. LUBRIPLATE Lubricants range from the lightest oils to the heaviest greases to meet every requirement of the textile industry.

For nearest LUBRIPLATE distributor, see Classified Telephone Directory. Send for free 56-page "LUBRIPLATE DATA BOOK"... a valuable treatise on lubrication. Write LUBRIPLATE DIVISION, Fiske Brothers Refining Co., Newark 5, N. J. or Toledo 5, Ohio.

REGARDLESS OF THE SIZE AND TYPE OF YOUR MACHINERY, LUBRIPLATE LUBRICANTS WILL IMPROVE ITS OPERATION AND REDUCE MAINTENANCE COSTS.

NEWS *of the Month*

be paid to the structure of fibers, yarns, and fabrics as it influences the properties of textiles and the nature and sequence of the operations that are necessary to manufacture them.

1954 CENSUS OF MANUFACTURERS

Early next year the Census Bureau of the U. S. Department of Commerce will conduct its every-five-year census of industry and trade. The census next year will provide facts about manufacturing, mineral industries, retail and wholesale trade, and other factors in the U. S. economy.

For the Census of Manufactures, to cover an estimated 275,000 industrial plants, the common inquiries will include plant identification, kind of industry, employment, payrolls, hours of work, cost of materials consumed, power equipment, water consumption, and value of product shipped.

ONE-WEEK COURSES AT LTI

Several one-week courses for textile men will be held at Lowell Textile Institute, Lowell, Mass., the last two weeks in June. A fee of $50 will cover tuition and supplies, while rooms on the campus will be available at $10 a week.

Subjects to be covered include (during the week of June 15 to 19): fiber identification, synthetic fibers, applied microbiology, and textile testing; and (during the week of June 22 to 26) interpretation of data.

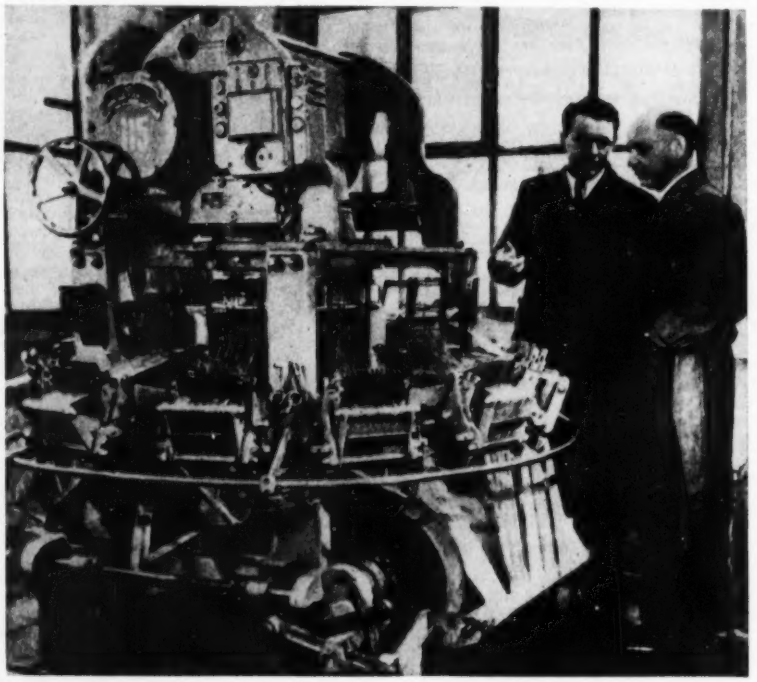
HOSIERY-DYERS' VACATION

The annual industry vacation for member hosiery dyers and processors will occur this year during the week beginning June 29 and ending July 4, the Guild Hosiery Conference has made known.

Member mills will shut down on Friday, June 26, and will not reopen until Monday, July 6.

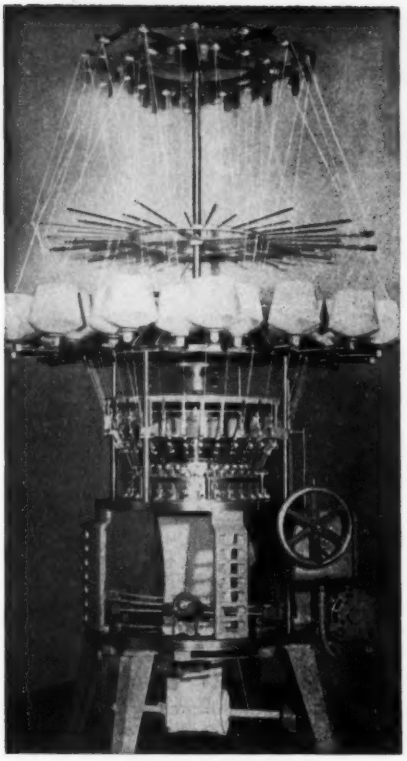
30-DEN. DULL NYLON

A 30-den. dull nylon yarn for use by tricot mills to provide greater opaqueness in lighter-weight fabrics is being produced on an experimental basis by E. I. du Pont de Nemours & Co., Inc. To be known as Type 670, the new yarn will be available in limited quantities this month. Yarns in 40 and 70 den. will follow "in time."



RUSSIAN CIRCULAR LOOM

CIRCULAR WEAVING LOOM of this type is working successfully in the Serp i Molot mill in Pushkino in the Soviet Union, according to the Russian press. Shuttles move around the circular race plate at a good speed and reportedly permit a sizable increase in cloth output. The inventor, S. Dynnik (right) is shown watching the loom with the weave-room chief, V. Maximov.



STANDARD EQUIPMENT
Edmos: Type EEM 20"—30 feeds

IT PAYS TO USE WESCO
ELECTRIC STOP-MOTIONS
FOR OUTERWEAR • UNDERWEAR • HOSIERY
STANDARD THE WORLD OVER

Wesco Stop Motions of Course!

Manufacturers and knitters all over the world buy and specify Wesco. They know from experience Wesco stop motions get the best out of the machines they build and buy.

Wesco is the "safety-first" word for Superior Knitting. When you purchase new knitting machine—Specify "Wesco" Electric Stopmotions.

LOOK FOR "WESCO" ON ALL THESE KNITTING MACHINES:

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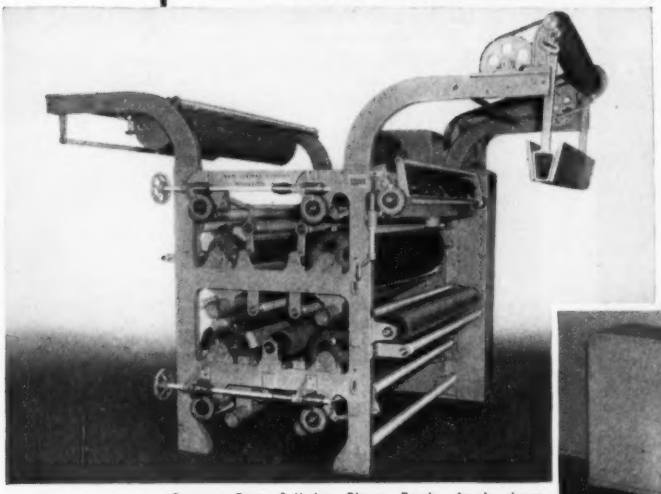
STOP-MOTION DEVICES CORP.
1471-77 Fulton St. Brooklyn 16, N. Y.
Another of a Series of Knitting Machine Builders. Others to follow

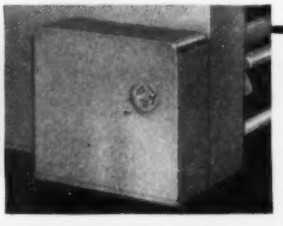
Clear out and soften your fabrics on this new GESSNER Steam Brush



Gessner Four Cylinder Steam Brush. Inset shows Variable Speed Control on far side of machine.

Designed especially for fabrics which must be cleared out and softened, Gessner's newly developed Steam Brush utilizes two brushing cylinders clothed with nylon brushes, two clothed with sandpaper and nylon bristles in alternate strips, and a spiral nylon back brush. The cylinders are accurately balanced for the high speed operation which increases brushing capacity up to 80 yards per minute.

Positive chain drive eliminates both belt slapping and slippage, and Centralized lubrication reduces maintenance time. A variable speed drive, which is optional, and independently adjustable contact rolls with indicator, are two other of the 20 different features of this new brush. When it comes to brushing, come to Gessner.



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CANADIAN REPRESENTATIVE: W. J. WESTAWAY, MONTREAL, QUEBEC; HAMILTON, ONT.

Gessner Improved Cloth Finishing Machines maintain a standard of performance to meet the exact requirements of your cloth finishing.

DAMP-TEX PERFORMANCE CREATES CONFIDENCE

Mr. Plant Manager:

More than 9600 industrial plants have selected Damp-Tex to solve their wet surface maintenance problems.

Damp-Tex, widely known as The Wet Surface Enamel, is your most reliable, economical method of transforming dingy, damp, unsanitary surfaces into lasting porcelain-like beauty at low cost.

You too, may use Damp-Tex with absolute confidence because through the years it has rendered completely satisfactory service to its many users. For you it will resist rot and rust, and corrosion from moisture, steam, alkali, gases, etc., retards fungus growth (with *new improved* factory pre-treatment). You can use it on any paintable interior *wet* or dry surface, changing interiors into glistening porcelain-like beauty. Dries overnight without flavor tainting oder. Available in white and colors.

Write for Folder "AA"

STAINLESS STEEL COATING

Now, for equipment and metal surfaces subjected to extreme alkali and acid conditions. Brush or Spray. Cost less than 4¢ per square foot. Write for information.

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WET OR DRY SURFACE ENAMEL

STEELCOTE MFG. CO., St. Louis 3, Mo.

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NEWS ABOUT Suppliers

EQUIPMENT SUPPLIERS

Air Reduction Sales Co., New York, N. Y., has named A. C. Brown, Jr., general sales manager. Mr. Brown will have his headquarters at 60 E. 42nd Street, New York, N. Y.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has elected Rex Reeder, executive vice president of the Marine National Exchange Bank, Milwaukee, to the board of directors.

American Blower Corp., Detroit, Mich., has appointed J. W. Ruff director of purchase. He succeeds R. S. Reade, who has been made director of purchases for American Radiator and Standard Sanitary Corp., the parent organization.

Barco Mfg. Co., Barrington, Ill., has moved all the company's manufacturing and business operations from Chicago to Barrington, where a new 103,000-sq.-ft. plant has been erected.

Borg-Warner Corp., Chicago, Ill., has named three new vice presidents: L. G. Porter, treasurer, has been made administrative vice president and treasurer; R. S. Ingersoll, president of the Ingersoll Products Div., has been named administrative vice president of the parent corporation; and Robert W. Murphy, general counsel, has been elected vice president and general counsel.

The Bristol Co., Waterbury, Conn., has made Harry E. Beane vice president of sales. He will continue to make his headquarters at the general offices of the company in Waterbury.

Brush Electronics Co., Cleveland, Ohio, formerly known as Brush Development Co., has changed the company name.

Bullard Clark Co., E. H. Jacobs Northern Div., Danielson, Conn., is now sales agent for the American Reed Co., Lawrence, Mass.

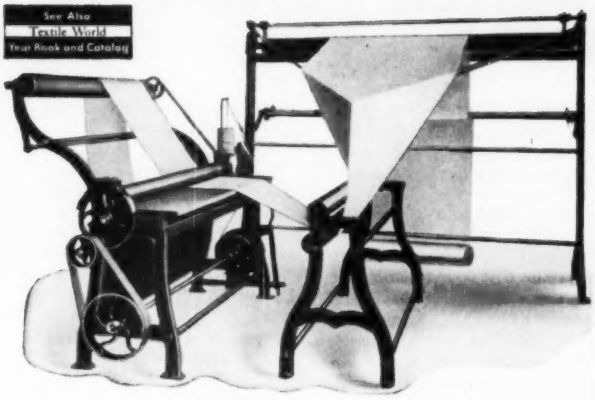
Carborundum Co., Niagara Falls, N. Y., has appointed Herbert P. Dales sales manager and Carl L. Adelman, assistant sales manager of the Coated Products Div.

Cleaver-Brooks Co., Milwaukee, Wis., has appointed J. H. Ballenger, Cincinnati, Ohio, as its representative. His firm is located at 1284 Bursal Ave., Cincinnati 30, Ohio.

Fidelity Machine Co., Inc., Philadelphia, Pa., has an-

FREDERIC W. HOWE, JR., (left) was elected president and general manager of Crompton & Knowles Loom Works at a recent stockholders' meeting. JOHN C. IRVIN (right) Southern sales manager, was named a director.

See Also
Textile World
Year Book and Catalog



No. 27—IMPROVED DOUBLING AND TACKING MACHINE

Sewing any length stitch up to 1¼ in., making a firm, strong stitch for any weight or width of goods. This machine is equipped with our latest oscillating needle bar sewing head, which makes it the fastest tacking machine on the market for tacking the selvages of woolen and worsted fabrics. For further information, send for our catalog.

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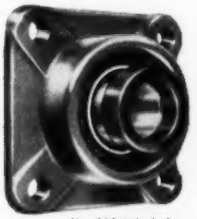
No. 200 Life-Lube Pillow Block



No. 201 Life-Lube Flange Unit

reduce maintenance costs with WOOD'S LIFE-LUBE bearing units

Absolutely no periodic lubrication maintenance is required on Wood's Life-Lube bearing units. They're lubricated at our factory for life. Now, you can do away with the grease gun and the man's time behind it because a synthetic seal (bonded to a steel core) keeps lubricant in and dirt out. Ideal for heavy dust, dirt or lint conditions. These units are of modern design, sturdy and compact. Standard 200 series MRC ball bearings with wide, deep ball race groove sustains the radial load and substantial thrust either way. For further information, write for Bulletin 194 or consult your Wood's Industrial Distributor.

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Stainless Steel CYLINDERS
...accurate...true running

Blickman Built Stainless Steel drying cylinder . . . 60 inch diameter. Plate No. 7252

Stainless Steel drying rolls . . . high pressure steam, built to A S M E code specifications.

FOR TROUBLE-FREE SERVICE UNDER MODERN HIGH SPEED TEXTILE OPERATIONS

For protecting the fabrics you process, Blickman Built cylinders are being recommended and used by an increasing number of manufacturers of textile finishing machinery. The reason is simple. Blickman specializes in the fabrication of stainless steel cylinders to give you a more accurate, more dependable, safer cylinder. Our special plant equipment and controlled welding procedures assure rugged construction for long service. Blickman Built cylinders are available through many textile machine builders or through us.

- **DIMENSIONS**—Built in any diameters or lengths to meet your requirements.
- **FINISH**—Polished on our own automatic machines to as high as number 6 finish, if you require it.
- **CODE REQUIREMENTS**—Cylinders built to conform to local and ASME national board codes.
- **INSPECTION**—Tested at twice working pressure . . . thoroughly checked for leaks.
- **CONSTRUCTION**—Mechanically sized for accuracy and true running. Furnished with or without heads.
- **TYPES**—Dry cans, presetting cylinders, cooling cylinders, etc.

Specify Blickman Built cylinders through your textile machine builder . . . or send your inquiry direct to us. Quotations furnished promptly.

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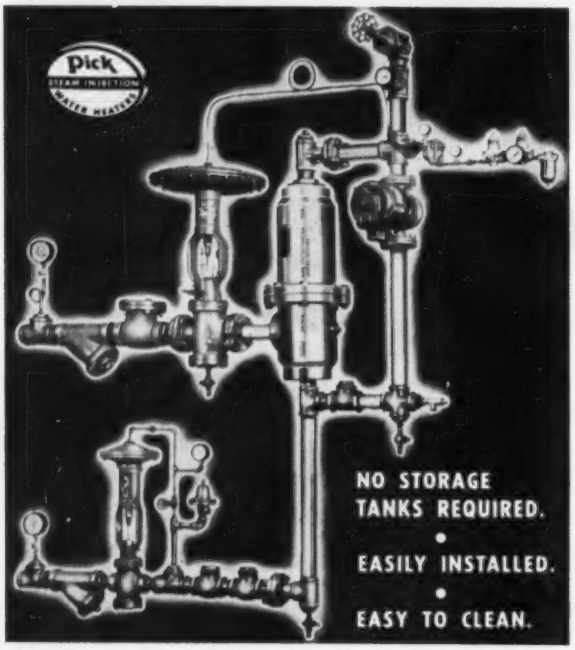
Manufacturers of stainless steel textile equipment, dye boxes, linings, cylinders, dry cans, rolls, hoods, tanks.

Are You Paying "EXTRA" for HOT WATER?

Do You Get CONSTANT UNIFORM TEMPERATURES for Dyeing and Bleaching Processes?



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ALL THE WATER NEEDED AT EXACT TEMPERATURE

Hot water is important in your business . . . and it can be costly! PICK Heaters eliminate fluctuating temperatures. They are entirely automatic to provide and accurately maintain water temperatures up to 180° F. Water is heated INSTANTLY by quiet steam injection — any quantity required. Only water used is heated — no wasted fuel. Easily installed in corners, on walls, or overhead — no storage tanks required. Seven sizes available with rated capacities of 10 to 300 gallons per minute at 140° F. temperature rise.

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Guyan Mills
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News About SUPPLIERS (Continued)

nounced a realignment of its top executive staff. Lawrence Katz, chairman of the board, has assumed active leadership of the company. Joseph P. Vogt, president and general manager, has taken charge of all new-product development and engineering. Roy Faigenbaum, vice president for sales, has been named to head the Market Development Div. Robert Scholes, vice president in charge of engineering and production, will have complete supervision of the plant.

Foster Machine Co., Westfield, Mass., has purchased from Easton & Burnham Machine Co., Pawtucket, R. I., the patterns and the right to manufacture an unrolling attachment that has been used for many years on some Foster winding machines.

Goodyear Tire & Rubber Co., Industrial Products Div., Akron, Ohio, has appointed Charles T. White, Jr., Pittsburgh district manager.

Hemphill Co., Pawtucket, R. I., has opened its new Southern office at 2011 English St., High Point, N. C. James McDowell will be in charge of the new office.

Lewis-Shepard, Watertown, Mass., has appointed Francis E. Honsa exclusive representative in the southern Connecticut area. Mr. Honsa has been with the company seven years as design engineer.

Merrow Machine Co., Hartford, Conn., has elected William M. Baker to the position of treasurer.

Page-Madden Co., Inc., Mineola, N. Y., has appointed Maurice A. Murray to its engineering staff. He had been associated with American Lava Corp., Chattanooga, Tenn. for the last 12 years.

Permutit Co., New York, N. Y., has promoted Durando Miller, Jr., to assistant technical manager.

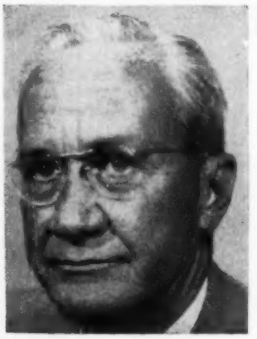
Proctor & Schwartz, Inc., Philadelphia, Pa., has named W. A. Dickinson, Jr., to succeed L. P. Tiers, retired, as Chicago branch manager.

Raybestos-Manhattan, Inc., Passaic, N. J., has moved into its new Chicago office and warehouse building at 6010 Northwest Highway, Chicago, Ill.

Rodney Hunt Machine Co., Orange, Mass., has appointed David A. Kuniholm manager, Special Products Div., in addition to his duties as manager of the Industrial Roll Div.

Steel Heddle Mfg. Co., Philadelphia, Pa., has appointed Albert R. Breen to represent it and its Southern Shuttle Div., Greenville, S. C. Located at 80 E. Jackson Blvd., Chicago, Ill., Mr. Breen will represent the company in Minnesota, Iowa, Wisconsin, Illinois, Michigan, Indiana, Ohio, Mississippi, and Kentucky.

Textile Machine Works, Reading, Pa., has purchased



OSCAR V. PAYNE (left), works manager of Crompton & Knowles Loom Works, has been elected a vice president and member of the board of directors. **HAROLD R. WING** (right) has been elected vice president and appointed general sales manager.

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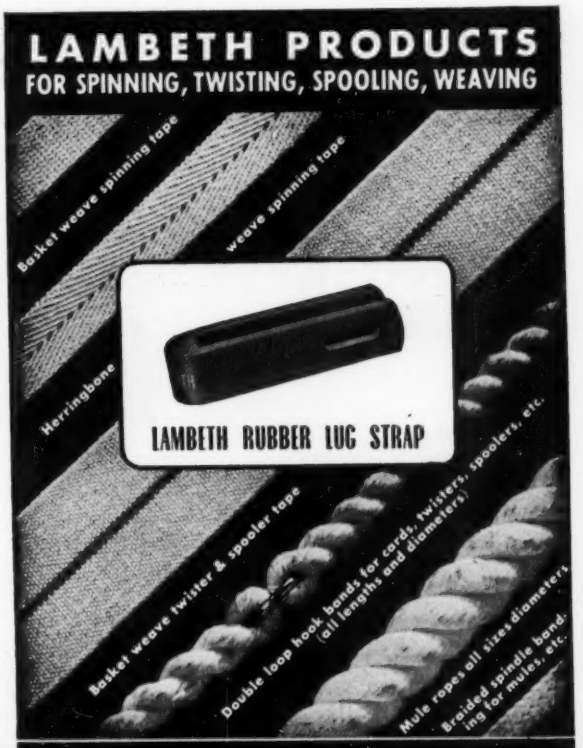
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Herringbone
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News About SUPPLIERS (Continued)

more spacious quarters for its full-fashioned knitting machine reconditioning branch located in Asheboro, N. C. The new building, located within several blocks of Textile's present site, has approximately 10,000 sq. ft. of floor space. Earl Zettlemoyer is superintendent of the Asheboro branch.

United States Rubber Co., New York, N. Y., has named Jacques A. Arrouet fabric-development engineer of its Textile Div. He will be responsible for the development of certain engineered-end-use textiles.

CHEMICAL & YARN SUPPLIERS

Allied Chemical & Dye Corp., New York, N. Y., has announced plans for a new $2,800,000 building to be erected at Buffalo, N. Y., to house the research and engineering staff of its National Aniline Div. Its Barrett Div. has acquired the Greensboro plant of Synvar Southern Corp. The plant comprises facilities to manufacture urea-formaldehyde resins.

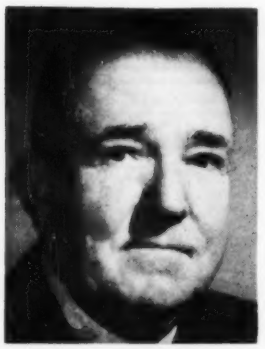
American Viscose Corp., Philadelphia, Pa., has promoted Hugh E. Hays from assistant to personnel manager of the Parkersburg, W. Va., plant. He succeeds John H. Devlin, who resigned to become superintendent of industrial relations for International Minerals Chemical Corp., Carlsbad, N. M.

Bryant Chemical Co., North Quincy, Mass., has added Earl Holt and Leroy Baines to its sales staff. Mr. Holt, who will cover North Carolina and Virginia, will work out of the Spartanburg, S. C., office with John Bryant. Mr. Baines's territory will include Maine, New Hampshire, Vermont, and portions of northern Massachusetts.

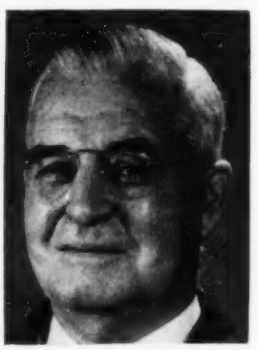
Calco Chemical Div., American Cyanamid Co., Bound Brook, N. J., has appointed Samuel E. Firestone sales representative for pigments in the Philadelphia territory. Donald L. Griswold has been made assistant to the manager of the dyestuffs department. J. R. Burkett will manage the Calco Div. at Montreal, relieving Mr. Griswold. The change will be effective in early July.

Celanese Corp. of America, New York, N. Y., has named E. J. Hansen assistant district sales manager, New York district, Textile Div. Paul D. White has been named merchandising director of the Textile Div. John D. Fennebresque, vice president and assistant to the president of Celanese, has been elected to the board of directors.

Chemstrand Corp., Pensacola, Fla., has appointed Law-



BRINLEY TAYLOR, vice president and director of Courtaulds (Canada) Ltd., was honored at a testimonial dinner for his 40 years' service with the company. Mr. Taylor started selling for Courtaulds in Coventry, England.



MYRON S. CURTIS, director of engineering of Warner & Swasey Co., has been elected engineering vice president. He has been largely responsible for the development of the Warner & Swasey weaving machine.

News About **SUPPLIERS** (Continued)

rence L. Copenhaver personnel superintendent and Boyce S. Myers assistant personnel superintendent of the nylon facilities now under construction. Fred G. Gronemeyer has been named assistant manager.

Dexter Chemical Corp., New York, N. Y., has announced that Thomas J. Scanlon, formerly head of the Philadelphia sales dyestuff laboratory, Calco Chemical Div., American Cyanamid Co., has joined its sales staff. Mr. Scanlon, secretary of the Philadelphia section, AATCC, will handle the sale of textile chemicals for Dexter in the Philadelphia area, southern New Jersey, and parts of Pennsylvania.

Diamond Alkali Co., Cleveland, Ohio, has announced that the name of its subsidiary, Kolker Chemical Works, Inc., a New Jersey corporation, has been changed to Diamond Alkali Organic Chemicals Div., Inc.

Dixie Size & Chemical Co., Columbus, Ga., has been organized to manufacture warp-sizing compounds and finishing chemicals. Cason J. Callaway, Jr., is president, Walter P. Hope is vice president, and W. S. Fair is assistant treasurer and plant manager.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has started production in its $40,000,000 Kinston, N. C., plant for the manufacture of Dacron polyester fiber. The first of six production units has gone into operation and is producing Dacron in staple and tow forms. The other five production units are expected to be in operation by the end of 1953. The production goal is an annual capacity of 35,000,000 lb. of staple and continuous filament.

Emery Industries, Inc., Chicago, Ill., has made several changes in its chemical sales staff. J. P. Clancy has been shifted from the Southern area to New England. C. T. Burgess will take over Mr. Clancy's sales duties in Mississippi, Alabama, Georgia, and the eastern section of Tennessee. Two additional men, E. L. Spencer and E. W. Sack, have been appointed to the sales staff.

Heyden Chemical Corp., New York, N. Y., has elected James K. Lindsay secretary. Mr. Lindsay was previously a partner in the law firm of Fulton, Walter, and Halley.

Libbey-Owens-Ford, Parkersburg, W. Va., has placed orders for machinery and equipment to double the textile fiber-glass capacity of the Fiber Glass Div. The expansion program will mean the installation of 48 additional producing units and will require a year to complete.

Metro-Atlantic, Inc., Centredale, R. I., has placed three new representatives on the sales force: Charles M. Lindsay, Jr., and John J. Walter on the Southern staff and Robert H. Carlson in southern New England. Metro Dyestuff Corp. has named John J. Fantry to head its Textile Pigments Dept.

WARREN D. OLIVER has been elected to the board of directors of the Draper Corporation. He is a senior partner in a leading law firm in Boston.

JAMES A. REILLY, executive vice president of Colgate-Palmolive-Peet Company, has been elected to the board of directors of the company.

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- **Knitted Athletic Shirts**
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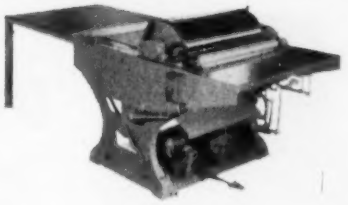
- **Kiddies' Panties**
- **and other knitted garments**



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FEATURES OF THE UTICA ROTARY PRESS—

Garments are steamed top and bottom, go through on a conveyor belt under large heated roll which sets on heated buck over a second heated roll, and come out the back to the folding table. Goods can be put through flat or folded. Pressure on big roll can be adjusted for different thicknesses. This press has variable speed drive . . . works with foot pedal for instant stopping. Comes equipped with switch and motor, and all necessary piping, traps, and check valves . . . completely assembled, ready to go to work. For further information on how this Rotary Press can do your pressing of knitted garments economically and efficiently, write today.

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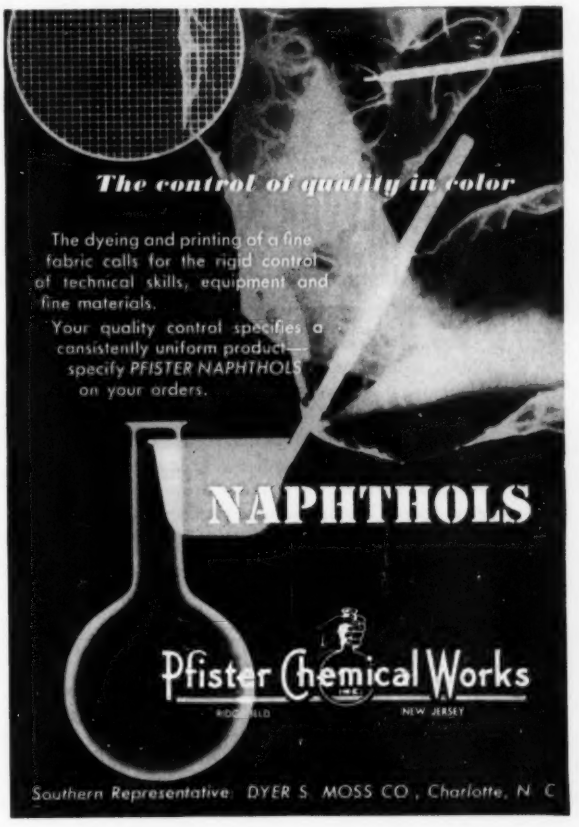
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NEWS ABOUT Mills

COTTON MILLS

Carolina Mills, Inc., Newton, N. C., plans to erect a one-story brick addition that will double the floor space of the present bleaching department. Additional dye tubs and finishing equipment will also be installed.

Croft Chenille Co., Chattanooga, Tenn., is rebuilding its branch mill at Fort Oglethorpe, Ga.

Dan River Mills, Inc., Danville, Va., has asked Army engineers for permission to build three towers to be used in connection with a project to replace the company's electrical distribution system at its Riverside division at Danville. This step, the first in a long-range program, will cost about $120,000 and require two years to complete.

Erwin Mills, Inc., Durham, N. C., plans to convert portions of the Erwin Auditorium into additional office space to relieve the overcrowded conditions in its main office building.

Florence Mills, Forest City, N. C., will pave 13 streets in the Florence Mill village at a cost of approximately $65,000.

Guin, Ala.—Town officials have engaged Lawrence S. Whitten, Brown-Marx Bldg., Birmingham, Ala., to prepare plans for a one-story industrial building that will be occupied under lease by Marion Mills, Inc. Bids for erection will be asked soon.

Huntsville Mfg. Co., Huntsville, Ala., has broken ground for a plant addition that will cost $198,000. Daniel Construction Co., Birmingham, is the contractor; G. W. Jones & Sons, Huntsville, is the engineer. The new three-story building will permit a 35% increase in production. New equipment will be installed.

Indian Head Mills, Providence, R. I., recently organized, will take over the Duncan Textile Co. and consolidate with its organization. Both companies are affiliated with Textron, Inc.

Lydia Cotton Mills, Clinton, S. C., recently completed an enlargement of its spinning and weaving facilities. New looms will be installed.

Opp Textile Co., Opp, Ala., plans to erect a new building that will contain 20,000 sq. ft. of floor space. The cost is estimated at $55,000. Construction is scheduled to begin soon.

Pacolet Mfg. Co., Pacolet, S. C., has begun construction of a community swimming pool and bathhouse. The project is part of the plant's over-all community recreational program.

Sagamore Mfg. Co., Fall River, Mass., is installing 200 new automatic looms in its plant.

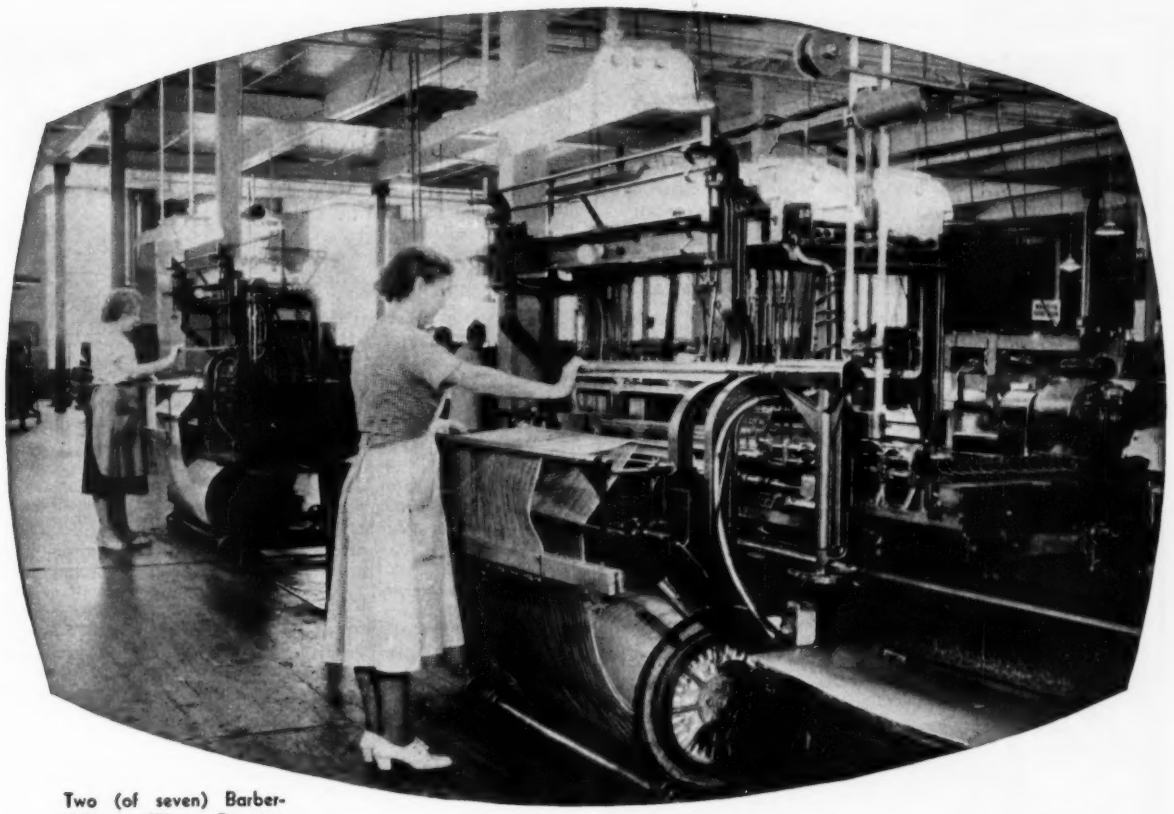
Walter Marshall Spinning Corp., Johnston, R. I., has received a permit to build a penthouse for the installation of air conditioning. The cost will be $5,000.

WOOLEN AND WORSTED MILLS

Chatham Mfg. Co., Elkin, N.C., has purchased the Leaksville Woolen Mills, Inc., Charlotte, N. C. No change in operation is contemplated.

Collins & Aikman, Inc., Bristol, R. I., has set up a production line in its Plant J for its worsted fabrics that is straight except for one reversal. The plant uses an Uxbridge slasher, stainless-steel dye kettles, a specially built dryer, and variable-speed-driven soaper. Fabrics are woven on 120 W-3 looms.

Crown Mfg. Co., Woonsocket, R. I., has allocated space in its plant at Attleboro, Mass.,



Two (of seven) Barber-Colman Warp Drawing Machines in the Dan River Mills, Schoolfield Division, Danville, Virginia. These machines draw up to 10 harness and 4 banks of drop wires. Operatives are two women and one helper.

BARBER-COLMAN WARP DRAWING MACHINES Reduce Drawing-in Costs

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SUPER-SPEED WARPERS
WARP TYING MACHINES
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News About **MILLS** (Continued)

for the consolidated offices of the Lippitt Worsted Mills and the Airedale Worsted Mills divisions, now located at Woonsocket. Some of the Lippitt and Airedale manufacturing will also be moved to Attleboro.

Hampshire Worsted Mills, Inc., Manchester, N. H., has been granted a permit to construct an addition to its plant at Lincoln and Auburn Sts.

Leaksville Woolen Mills, Charlotte, N. C., is now associated with Chatham Mfg. Co., Elkin, N. C., through an exchange of stock. John Morehead, president of Leaksville, will continue with the company in that capacity.

James Lees & Sons Co., Bridgeport, Pa., plans an addition to its spinning mills at Glasgow, Va. H. A. Kuljian Corp., Philadelphia, Pa., is the architect and engineer. The one-story addition will be of masonry and steel construction, with concrete foundations and built-up roofing.

Porritts & Spencer (Canada) Ltd., Hamilton, Ont., has an expansion program under way in its felt and blanket plant. An addition that will provide more space for weaving, burling, and joining will be constructed. Additional felt looms and preparatory machinery will be installed.

Seifert Woolen Mills, Jefferson, Wis., has been acquired by the George W. Borg Corp., Delavan, Wis., and will operate as a division of the Borg firm. The new owner plans to erect an addition to the Seifert plant.

SYNTHETICS MILLS

Aldora Mills, Barnesville, Ga., will use the plant space made available by the sale of carding and spinning equipment to install new twisting and weaving equipment.

Bruck Mills Ltd., Sherbrooke, Que., is installing more than 50 new Crompton & Knowles high-speed W3-AC suiting looms in its plant at Sherbrooke. The spinning unit has been increased by one-third; spindles now total 7,500. Four new Saurer looms are being installed on an experimental basis.

Burlington Mills Corp., Greensboro, N. C., will consolidate its manufacturing and selling activities with the parent organization and drop the name Burlington Mills Corp. of New York. Walter E. Greer, Jr., executive vice president of the parent company, will move his headquarters from Greensboro to New York to assume several duties formerly carried on by the New York executive head. Burlington has awarded the construction contract to Heenan Holt, Graham, N. C., for a $100,000 addition to its plant at Reidsville, N. C.

Cheney Bros., New York, N. Y., has purchased Greeff Fabrics, Inc., from Burlington Mills Corp.

Delaware Mills, Inc., New Castle, Del., has let a contract to Cantera Construction Co., Wilmington, Del., for a one-story spinning mill at Frederica, Del. The cost will be $100,000.

Roanoke Mills, Inc., Roanoke, Va., has been granted a permit to expand its warehouse space. Construction work will be done by F. L. Bowman. The estimated cost is $50,000.

United Merchants & Manufacturers, Inc., Fabric Production Div., has moved its offices from New York, N. Y., to Greenville, S. C. This division is in charge of production at the company mills in Clarkesville, Elberton, and Augusta, Ga.; Clearwater, Bath, Union, and Buffalo, S. C.; and Statesville and Old Fort, N. C.

KNITTING MILLS

Damascus Hosiery Mills, Inc., Damascus, Va., has obtained a $50,000 loan from the RFC under the Defense Production Act.

Louis Gallet Knitting Mills, Inc., currently in operation at Penncraft, Pa., has arranged with the Greater Uniontown Industrial Fund to build a

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News About MILLS (Continued)

16,000-sq.-ft. plant at Uniontown, Pa. The company will occupy the building under a 10-year lease.

Globe Knitwear Co., Philadelphia, Pa., will expand production at its new location at 831 Arch St.

Holly-Knit, Inc., Mount Holly, N. C., a subsidiary of American & Efird Mills, Inc., will double the capacity of its finishing plant when the expansion program now under way has been completed. This new expansion will be devoted entirely to finishing on a commission basis for other producers. It was stated that Holly-Knit, Inc., has no plan to increase its own warp-knit production.

Kayby Hosiery Mill of North Carolina, Inc., High Point, N. C., has been incorporated to manufacture hosiery with an authorized capital of $100,000. The incorporators are Herbert S. Falk, J. T. Carruthers, Jr., and Charles E. Roth.

Julius Kayser & Co., Westminister, S. C., has installed several new machines to increase its hosiery production.

John L. Lyerly & Sons is the new name of the Catawba, N. C., plant of Elliott Knitting Mills, Inc., Hickory, N. C. John L. Lyerly, former general manager of the Elliott company, has purchased the Catawba plant and has severed his connection with the parent company at Hickory. Mr. Lyerly will install new equipment for the manufacture of men's hosiery. Delmar Cagle, of Catawba, will be the superintendent.

Earl McCallum Ltd., North Vancouver, B. C., has purchased Pacific Hosiery Mills Ltd., where Mr. McCallum was formerly general manager. Machinery and equipment for production of work socks and men's hose has been transferred from the McCallum and Pacific Hosiery plants to a new plant. Vern A. Gilliam, founder of Pacific Hosiery Mills, is vice president, a director, and production superintendent of the company. F. E. Mayol, former vice president of Frederick & Nelson, Seattle, is secretary-treasurer.

Monarch Knitting Co. Ltd., Toronto, Ont., is now completing its renovation program at its plant in Dunnville, Ont. This plant now covers over 200,000 sq. ft. of floor space. The dyehouse is being completely overhauled.

Munsingwear, Inc., Minneapolis, Minn., is transferring all its knitting and gray-goods operations currently conducted at the Rollins Hosiery Mills Div., Des Moines, Iowa, to Bentonville, Ark. The finishing and shipping departments will remain in Des Moines.

Prim Hosiery Co., Chester, Ill., will install two new long-section 66-gauge full-fashioned hosiery machines. It will also regauge some of its 32-section, 51-gauge machines to 60 and 66 gauge.

DYEING & FINISHING PLANTS

Banner Yarn Dyeing Corp., Brooklyn, N. Y., has completed the installation of new yarn drying, cooling, and conditioning equipment.

Cranston Print Works, Charlotte, N. C., is asking construction bids on a one-story 180x200-ft. brick addition to its Fletcher, N. C., plant. The addition will be used mainly for storage. J. E. Sirrine Co., Greenville, S. C., is the architect. The company plans the construction of a one-story addition at its unit at Fletcher, N. C. This unit will be used primarily for storage.

Lehigh Dyeing & Finishing Corp., Allentown, Pa., recently began production. Earl S. Dunlap is president and manager of the new corporation. Frederich Beard will manage the finishing department.

Pawtucket Dyeing & Bleaching Co., Inc., Pawtucket, R. I., has received a permit to construct a frame addition.

Rock Hill Printing & Finishing Co., Rock Hill, S. C., has purchased the former plant of Samarkand Rug Co. and will use this space for warehouse purposes.

NEWS ABOUT Men

Irving Altschuler has been appointed plant superintendent for Cole of California, Los Angeles, Calif. He succeeds **Earl Greene**, who has resigned.

Jaques A. Arrouet has been named fabric-development engineer of the Textile Div., United States Rubber Co., New York, N. Y.

Raymond J. Barber has been appointed controller of the Flagg-Utica Corp., Utica, N. Y. **Lloyd L. Lively** has been named assistant to the president tor the Utica Knitting Co. and Sherburne Yarn Mills divisions of the company.

Ralph Barnhard, formerly overseer for Burlington Mills Corp., St. Pauls, N. C., is now research supervisor for the Department of Textile Research, School of Textiles, North Carolina State College, Raleigh, N. C.

William Bartelt has been named superintendent of finishing for Virginia Woolen Co., Winchester, Va.

John C. Beal, has resigned as technical overseer of weaving at Cone Mills Corp., Greensboro, N. C. Mr. Beal has accepted a similar position with Lane Cotton Mills, New Orleans, La.

John E. Beaty has been appointed general manager of Marinette Knitting Mills, Marinette, Wis., succeeding the late **Joseph A. Lauerman.**

Donald R. Belcher and **Fred J. Beyer** have been elected to the board of Botany Mills, Inc., Passaic, N. J. They succeed the late **Col. Charles F. H. Johnson,** and **Albert E. Howe,** resigned.

Alex W. Bell, formerly vice president and general manager of manufacturing for American & Efird Mills, Mount Holly, N. C., has been named executive vice president. **James H. Martin, Jr.**, previously general superintendent, succeeds Mr. Bell.

Eric Bell has succeeded **Frank Stubbings** as manager of the Dublin Finishing plant of Burlington Mills Corp., Dublin, Va.

THOMAS M. BANCROFT has been elected a director of Alexander Smith, Inc., Yonkers, N. Y.

Joseph W. Brogden, former overseer of spinning at Nashawena Mills, New Bedford, Mass., is now associated with Dayton Rubber Co., Dayton, Ohio.

S. P. Burke has been appointed overseer of dyeing for Colgate Piece Dye Works, Hawthorne, N. J.

James M. Busher, acting resident manager of the National & Providence Mill of American Woolen Co., Providence, R. I., has been transferred to the company's Puritan Mill, Plymouth, Mass., as resident manager. He replaces **Charles E. Butterfield**, who is retiring.

William B. Carden has resigned as superintendent of the cotton manufacturing division of C. R. Daniels, Inc., Daniels, Md.

Ray E. Chandler now heads all production planning for Robbins Mills, Robbins, N. C. He succeeds **Arthur M. Spiro**, who is now coordinating the manufacturing and merchandising policies of the company as administrative assistant to **Herman Goodman**, executive vice president.

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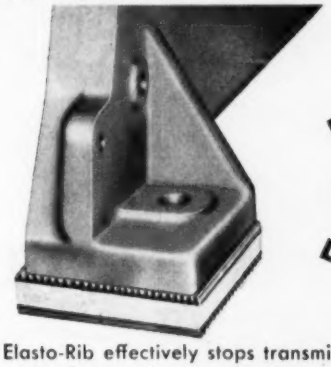

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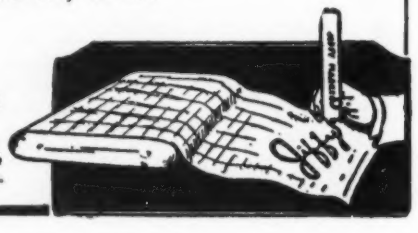
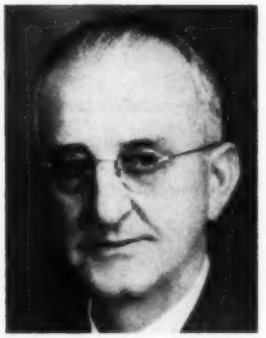


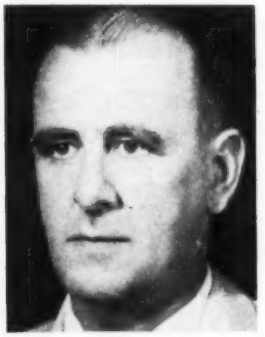
News About **MEN** (Continued)

J. HARVIE WILKINSON, JR.



ROBERT T. MARSH, JR.

ROBERT O. ARNOLD



WILLIAM H. BARNHARDT

J. HARVIE WILKINSON, ROBERT O. ARNOLD, ROBERT T. MARSH, JR., and WILLIAM H. BARNHARDT have all been elected to the board of directors of Dan River Mills, Inc., Danville, Va.

James H. Conners, former dyer for Faith Mills, Averill Park, N. Y., is now head of the dyeing department of Union Piece Dye Works, West Sand Lake, N. Y.

Donald Corrette has been named assistant foreman of carding at Lebandale Mills, Inc., Lebanon, N. H. **Donald Weld**, is now overseer of carding in both the Lebandale Mills and Lebanon Woolen Mills, Lebanon, N. H.

A. D. Crenshaw, formerly secretary-treasurer of Magnet Mills, Clinton, Tenn., has been elected executive vice president and secretary of the company. **R. S. Moxby** is now treasurer.

Joseph C. Crowley has been named general manager at High Rock Knitting Co., Philmont, N. Y.

J. Morton Curran, Jr., has been named president of Summerville Mfg. Co., Summerville, Ga. He will also continue as treasurer.

John Dailey has been appointed overseer of finishing at the Montrose Mill of Guerin Mills, Inc., Woonsocket, R. I.

Joe R. Daniel has been appointed superintendent of the new throwing plant of Textron-Southern, Inc., Williamston, S. C.

F. V. Deaderick has been elected a director of Bemis Bro. Bag Co., Boston, Mass. **R. Ramsay** has been made secretary and comptroller. **David M. Finley** is now assistant secretary and assistant comptroller.

Ralph L. Donnelly has been named general superintendent

News About **MEN** (Continued)

of the Mascoma Mills of American Woolen Co., Lebanon, N. H.

Ellwood Eddington has been named assistant plant manager of Duplan Dyeing Co. Ltd., Valleyfield, Que.

Wilfred Emery has resigned as overseer of weaving and dressing at Albany Felt Co., North Monmouth, Me.

Fred M. Fowler has resigned as superintendent of Hart Cotton Mills, Tarboro, N. C.

Jack Frank has joined Belcraft, Inc., Dalton, Ga., as assistant production manager.

Gardner L. Friedlander has been elected a director of Phoenix Hosiery Co., Milwaukee, Wis.

James Funderburk, superintendent of Cannon Mills Co., Plant No. 2, Concord, N. C., has been named superintendent of the Hadley-Peoples Mfg. Co., Siler City, N. C. **Dewey Daves**, of Kannapolis, succeeds Mr. Funderburk at Cannon Mills.

Herbert Funke has been elected vice president of Gilbertville Mills, Gilbertville, Mass.

Roy Garritt has been named superintendent of the Peterborough Div. of Verney Corp., West Peterborough, N. H.

W. W. Greene has been named secretary and **John P. Stevens, Jr.**, has been elected to the board of Marion Mfg. Co., Marion, N. C.

Wilbert C. Hammel has resigned as a director of Alexander Smith, Inc., Yonkers, N. Y., and as general manager of the company's carpet division.

James Hassett has been named overseer of carding at the Webster Mills of American Woolen Co., Webster, Mass.

Lewis Hayward has been named overseer of dressing for Cedartown Textiles, Inc., Cedartown, Ga. He was formerly with Wuskanut Worsted Corp., Farnumsville, Mass.

Medric Henault has been appointed second hand of dyeing on the second shift at Champlain Mills, Winooski, Vt.

J. C. Henderson has been named executive vice president and a director of Victory Mills Ltd., Toronto, Ont. **R. G. Loftus** has been appointed vice president in charge of production.

Harold Herd has moved from Abbeville Mills Corp., Abbeville, S. C., to take charge of costs and accounting at the Excelsior Finishing Plant, Pendleton, S. C.

John T. Hicks has been named manager of the decorative-fabrics division of Mooresville Mills, Mooresville, N. C. He succeeds the late **James H. Bulkley**.

Glen Hitchcock has been named overseer of knitting at Gloversville Knitting Co., Gloversville, N. Y.

Luther Hoard is now overseer of spinning and carding at Monument Mills, Inc., Housatonic, Mass., succeeding **George Proulx**, who is now with Bates Mfg. Co., Saco, Me.

John Hobbs, formerly with Wuskanut Mills, Farnumsville, Mass., is now assistant superintendent at Pacific Mills, Lawrence, Mass.

Edwin M. Holt has resigned as director of research and development for Erwin Mills, Durham, N. C. Mr. Holt is now assistant to **Clarence Cone**, vice president of Cone Mills Corp., Greensboro, N. C.

F. R. Hulser has resigned as manager of Mill B of Goodall-Sanford, Inc., Sanford, Me.

Joseph Inscoe, formerly superintendent of Chadwick Mills, Charlotte, N. C., is now superintendent of Plant No. 1 of Carolina Mills, Inc., Maiden, N. C., succeeding **Fred Harbinson**.

Shelby H. Jarman has been elected president of Waterville Textile Mills, Inc., Waterville, N. Y. Mr. Jarman succeeds the late **LeRoy L. Harding**.

C. J. Jordan has been promoted to section superintendent in charge of carding and spinning at the Schoolfield Div. No. 1 of Dan River Mills, Dan-

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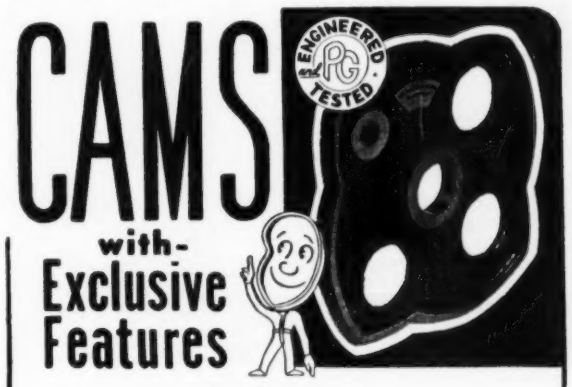
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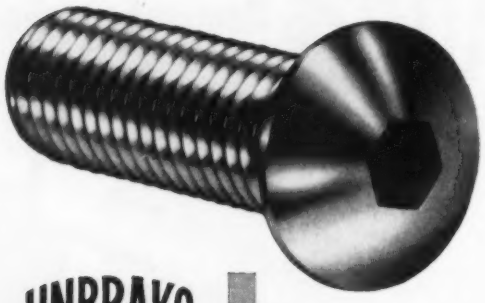

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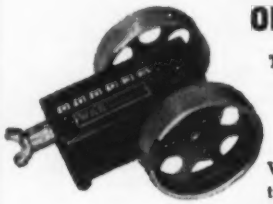

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News About **MEN** (Continued)

ville, Va. **Earl D. Jones** has been named technical advisor to the general superintendent on carding and spinning.

William L. Johnson, assistant superintendent at the Oxford, N. C., plant of Burlington Mills, has been named superintendent. He succeeds **Marshall E. McManus**, who has returned to his former post as superintendent of the St. Paul, N. C., rayon plant of Burlington. **Raymond Mayhew**, formerly with the St. Paul plant, has been named assistant superintendent at Oxford.

Marvin R. Klarquist has been named president and general manager of Empire Worsted Mills, Jamestown, N. Y. He succeeds **Clyde L. Carnahan**, who has retired.

Arthur Lemieux has been named overseer of carding for W. S. Libbey Co., Lewiston, Maine.

John S. Lewis is now manager of the Zimmerknit Div. of York Knitting Mills Ltd., Hamilton, Ont., succeeding **S. S. Higgs**, retired.

Royal Little has been named chairman of the board of Textron, Inc., Providence, R. I. He is succeeded as president by **Robert L. Huffines, Jr.**, former president of Burlington Mills Corp. of N. Y. Mr. Huffines will be in complete charge of purchasing, manufacturing, and merchandising, with headquarters at 1407 Broadway, New York.

F. M. Littlefield, has resigned as overseer of dyeing at Kenwood Mills, Inc., Cavendish, Vt. He is succeeded by **Achilles Mafiglois.**

George E. MacLellan, Jr., has been elected treasurer of American Woolen Co., New York, N. Y., to succeed **Frank S. Connett**, who has retired.

Henry B. Malone, formerly employed at Cloverdale Dye Works, High Point, N. C., has accepted a position in the central laboratory of the Carter Fabrics Group of J. P. Stevens & Co., Inc., Greensboro, N. C.

Frank Maxmillian has been named day overseer of weaving at Sawyer Regan Co., Dalton, Mass., succeeding **C. M. Bressette**, who is now with A. D. Ellis Mills, Inc., Monson, Mass. **Leo Rivers** is now overseer of dressing at Sawyer Regan, succeeding **Noel La Chance** who recently retired.

T. M. McNeill has resigned as general superintendent of the Olympia and Granby Mills, Columbia, S. C.

Mrs. Clarence R. Miller has been elected chairman of the board of Texas Textile Mills, Dallas, Tex. **Russell Middleton** has been promoted to vice president and administrative officer.

James Milnes, who recently resigned as overseer of carding at the Stevens plant, North Andover, Mass., is now overseer of carding at Jewell Brook Woolen Co., Ludlow, Vt.

Claude S. Morris has retired

H. WICKLIFFE ROSE (left) has been named general manager of The Linen Thread Co., Inc., Paterson, N. J. Mr. Rose is expected to succeed DAVID LEONARD MALCOLM (right), president, who will resign on July 1.

News About **MEN** (Continued)

as vice president and general manager of Cone Mills Corp., Salisbury, N. C.

Fay Moulton has been named overseer of finishing at Packard Mills, Inc., Webster, Mass., succeeding **D. Higgins.**

William Noble has returned to Sawyer Regan Co., Dalton, Mass., as finisher.

H. P. Oldfield is now superintendent of weaving and finishing at Worcester Textile Co., Inc., Greystone, R. I.

J. F. Parker has resigned as secretary of Marion Mfg. Co., Marion, N. C. He has been succeeded by **W. W. Greene.**

William Falls Pettit has retired as overseer of the spinning room at Darlington Mfg. Co., Darlington, S. C.

Maurice G. Phillips is now general superintendent of Botany Mills, Inc., Passaic, N. J.

Bernard Rivers has been appointed superintendent of dyeing at Delta Finishing Co., Plant No. 2, Attleboro, Mass.

Nathly A. Robbins has been elected vice president and a director of Webco Mills, New York, N. Y.

Graydon Robinson has been elected to the board of Lebanon Woolen Mills, Lebanon, Tenn.

Frederick Rollinson has resigned as general manager in charge of production at the Soule Mill, New Bedford, Mass. **Joseph A. Dancewicz** has been named to succeed Mr. Rollison.

J. U. Ryan, Jr., formerly overseer of dyeing, second shift, at Ounegan Mills of American Woolen Co., Old Town, Me., is now associated with James Lees & Sons Co., Bridgeport, Pa., as a dyer.

Hugh Stroupe, personnel director at Flint Plant No. 1 of Burlington Mills, Inc., Gastonia, N. C., has been transferred to Burlington's Modena plant as personnel director. **John H. Lomax** will succeed Mr. Stroupe. **Robert Pittman** succeeds Mr. Lomax as personnel manager at St. Paul's.

OBITUARY

Philip J. Barry, Sr., night superintendent at Berkshire Fine Spinning Associates, Warren, R. I.

Walter E. Blair, assistant to the president of the Solvay Process Div., Allied Chemical & Dye Corp., New York, N. Y.

Joseph E. Boston, sales manager for American Moistening Co., Charlotte, N. C.

Fred C. Butler, 58, general superintendent of the Bemis Cotton Mill, Bemis, Tenn.

L. Earl Chapman, 48, supervisor of the cone department of Sonoco Products Co., Hartsville, S. C.

Frank Tatum Gibson, 51, secretary of Bladenboro Cotton Mills, Bladenboro, N. C.

Joseph Harrison, 87, founder of Samuel Hird & Sons, Garfield, N. J.

M. Arnold Henderson, 58, Chicago, Ill., representative of Standard-Coosa-Thatcher Co. Mr. Henderson was a former president of the Chicago Yarn Men's Club.

Alex Housler, overseer of mending at M. T. Stevens & Sons Co., North Andover, Mass.

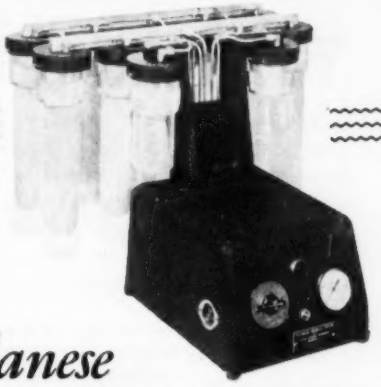
Alexander McEvoy, manager of Ballston-Stillwater Knitting Co., Ballston Spa, N. Y.

Leonard H. Newman, 39, a partner in Progressive Knitting Mills, Philadelphia, Pa.

Dr. Paul Schlosser, 59, research manager of Rayonier, Inc., New York, N. Y.

Jerry C. Stone, 77, president of Eastman Chemical Products, Inc., and also former executive vice president of Tennessee Eastman Co., Kingsport, Tenn.

Frederick H. Ulrich, 52, head dyer at Manhattan Print Works, Passaic, N. J.



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2060 Brook St., Louisville, Ky.

Caldwell TANKS AND TOWERS

For more information, write direct or use Reader Service post card. 293

TEXTILE CHEMIST

To develop applications of a new class of polymers having unusual surface properties in the textile trade. Must have broad experience in the textile field. Some knowledge of paper applications would be valuable. Moderate travel and customer contacts. Ideal Eastern location in moderate sized city and easy access to summer and winter resort areas. Salary $7500-$9500.

PLEASE REPLY GIVING DETAILS OF EXPERIENCE AND TRAINING

P-7488, Textile World

330 W. 42 St., New York 36, N. Y.

SEARCHLIGHT Equipment Spotting SERVICE

This service is aimed at helping you, the reader of TEXTILE WORLD, to locate used and surplus new textile machinery and equipment not currently advertised. (This service is for user-buyers only.)

Just send in the specifications of the equipment wanted on the coupon below, or on your own company letterhead, to

Searchlight Equipment Spotting Service
c/o Textile World
330 W. 42nd St., N.Y. 36, N. Y.

Your requirements will be brought promptly to the attention of the used equipment dealers advertising in this issue. You will receive replies directly from them.

NO CHARGE .• NO OBLIGATION

Searchlight Equipment Spotting Service
c/o Textile World
330 W. 42nd St., New York 36, N. Y.

Please help us locate the following used equipment:

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NAME ..... TITLE .....

COMPANY .....

STREET .....

CITY ..... ZONE ..... STATE .....

5/53

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

GOOD OPPORTUNITY for experienced man capable to take full responsibility to operate elastic mill. Will arrange for profit sharing agreement with competent man. P-7687, Textile World.

SHAFT & Jacquard upholstery & drapery fabrics. Excellent opportunity for one expd. in check paper work. Mill located in Phila. Reply in full by letter, including age, background, experience & any other relevant information to E-11, P.O. Box 3575, Phila. 22, Pa.

ACCOUNTANT. DEGREE in accounting. Two or three years experience in textile accounting preferred. Desirable New York State location. P-7384, Textile World.

SELLING OPPORTUNITY OFFERED

WANTED: SUCCESSFUL Mfgr's Agents to add textile-finishing machinery. Commission basis. SW-6704, Textile World.

POSITIONS WANTED

OVERSEER OF weaving available now employed—Excellent quality and efficiency record. Experience includes both Draper & C&K looms & all synthetic fibers. Capable training own help. Hygrade man. Best of references from employers as well as Textile School. PW-6952, Textile World.

TEXTILE ENGINEER (26), experienced in manuf. and selling woolen and wors. cloth desires supervisory, (weaving, dyeing, finish.) designing or selling position. Univ. grad. 5 languages. Write to PW-7385, Textile World.

DETROIT MANUFACTURERS Agent—Desires to represent Synthetic Fabric Mill capable of volume upholstery production for Automotive Industry. Have valuable contacts established over 15 years selling Woolen Automotive. Upholstering. PW-7425, Textile World.

AVAILABLE YOUNG Textile Engineer. Excellent knowledge of cottons and cotton wastes. MIT graduate with thorough training in industrial engineering and production control. Obligated Naval service completed June 1st. Desires position with challenge and future. PW-7491, Textile World.

WEAVING OVERSEER available—Thoroughly experienced mechanical and supervisory all operations from yarn to cloth off loom. Experienced all types C&K looms. Able to handle all type of help. Good work and character references. PW-7537, Textile to handle all type of help. Good work and character references. PW-7537, Textile World.

SUPERINTENDENT OR asst. supt.—Thorough training and 22 yrs. experience in all departments on cotton, silk, nylon, rayon. Specialized in warping, slashing, fancy weaving (C&K & Draper looms) & designing. Know production, quality control & cost. Good producer of efficiency & quality at low cost. PW-7665, Textile World.

(Continued on page 296)

AVAILABLE FOR CONSULTING WORK

Textile wet-processing, (dyeing & finishing) for short or long-term engagements within or outside USA.

PW-6560, Textile World
330 W. 42 St., New York 36, N. Y.

REPEAT LINES WANTED

Manufacturers representative looking for lines or specialties to New England Textile Plants. Preferable to Card, Weave, Spinning and Shipping Departments. Contacts built up over a 15 year period. Practical and Textile School background. Guarantee satisfactory presentation and intelligent follow-up.

R. B. DARCEY, P.O. Box 384, Woonsocket, R. I.

Additional Employment Advertising on pages 296 & 297—Business Opportunity Advertising on page 298

FOR SALE

COMPLETE RAYON SPINNING UNIT

Installed in 1951 and 1952

Saco Lowell — Latest Type

Includes Opening, Picking, Carding, Drawing, Roving Spinning, Coning, Winding, and Laboratory Equipment

6336 Spindles — Saco Lowell Z-2 WW Frames

24 Frames of 264 Spindles each

2¼" Ring, 4" Gauge, and 9" Traverse

USED EQUIPMENT — AVAILABLE IMMEDIATELY

SPINNING

GESSNER TEASEL GIG and BRUSH RANGE — Item GTG-B
New 1948—Used 3 months
68" Working Width

WINDING

SACO LOWELL COTTON SLASHER — Item SLCS-E
Complete with auxiliary equipment
Including Model D High Speed Warper
Regular Width—Beam Type

2 YARN WARP COILERS — Item 12166
Ceiling Type

WHITIN QUILLER—MODEL J — Item L-WQ
304 Spindle
3½" Gauge—10½" Traverse

FINISHING

HUNTER CARBONIZING TANK—NEW — Item HCT-J
Lead-lined Cypress Tank
Fittings acid resisting metal
Nip rolls rubber covered
90" wide—Never used

CURTIS & MARBLE STEAM PRESS — Item 12290
66" Working Width
Chain Drive but Without Motor

DRY TIGER — Item 13214
3 Cylinder. Complete with cylinders and fancies, motors and starting equipment for cylinder and exhaust hoods.

MISCELLANEOUS

1—4 ROLL MANGLE—BUTTERWORTH — Item 12582
For Dye Machines
66" Working Width
Rubber Rolls

12—INFRA RED LAMPS — Item 12905
Battery arranged in one trough
12 lights wide—375 Watt—115 Volts

24—INFRA RED LAMPS — Item 12130
Battery arranged
4 lights x 6 lights
Brass Reflectors
500 Watt—115 Volts

30,000—W-3 AUTOMATIC FILLING BOBBINS — Item 13584
8" O.A.—7" Barrel

390 RED FIBRE CASES — Item 12610
35" long x 17" wide x 32" high
These cases are well constructed with 4 runners on the bottom and inside metal handles at the top. All corners and top are reinforced metal with 1¼" strap iron.

COLLINS & AIKMAN CORP.

SALES & SALVAGE DIVISION

5th and Upland Avenues — PHONE CHESTER 3-4167 — Upland, Delaware Co., Pa.

LIQUIDATION SALE

MODERN PRINTING & FINISHING MACHINERY

2—50", 8 color, Rice, Barton & Fales Printing Machines.
1—46", 8 color, Rice, Barton & Fales Printing Machine.
1—50", 10 color, Rice, Barton & Fales Printing Machine.
1—64", 4 color, Textile Printing Machine.
1—50", Van Vlaanderen 3 roll Padding Machine, with 8—50" Drying Cans.
2—60", 18' Cast Iron Vat Agers.
2—54", 18' Cast Iron Vat Agers.
1—76" Polishing Lathe.
1—100 Gal. Steam Jacketed Mixing Kettle.
4—½ H.P. Gearhead Motor Mixers.
1—40"x60" Van Vlaanderen Tenter Frame.
1—48", Haring & Stevens Self-balancing Extractor.
1—54", Scutcher, with L-4 Nash Pump & Motor.
1—60"x60", Van Vlaanderen Tenter Frame.
1—40"x60", Morrison Machine Co. Tenter Frame.
1—64" Van Vlaanderen Palmer.
1—50" Van Vlaanderen 2 roll Quetch.
1—54" Van Vlaanderen Decating Machine, with L-4 Nash Pump & Motor.
1—60" Van Vlaanderen 3 roll Calender, 2 paper & 1 steel.
2—75 H. P. Reliance A.C.D.C. Generator Set.
1—Standard Print Washer.
1—8'x8'x30' long Cottage Steamer.
1—National Dry Box, 9 fan, 40' long, 88" Revolving Sticks.

1,000 COPPER ROLLERS

SHerwood 2-7666 — SHerwood 2-7667

Moe Blank

DOMESTIC — EXPORT

TEXTILE MACHINERY

523-525 E. 18th ST. — PATERSON 4, N. J.

MEN WANTED

POSITIONS OPEN

We can place: Manager worsted yarn mill, French and American Systems on wool, dacron, nylon and other synthetics, very fine opening; GENERAL SUPT. white and colored cotton goods (South); underwear supt.; tricot mill mgrs., supts., overseers and fixers; supt. scouring, card, and comb. French sys.; woolen and worsted cloth and yarn mill supts., asst. supts. and designers; mgr. silk and nylon thread mill; supt. weav., pile fabrics; production mgrs., for sweaters and underwear mills; asst. supt. cot. combed yarn fabric mill; asst. supt. large cot.-rayon cloth mill; asst. supt. rayon dyeing and fin.; asst. supt. worsted yarn mill, South; rayon-cot. designers for New England and New York City; personnel director; designer pile fabrics; textile microscopist.

OVERSEERS for woolen card.; woolen and worsted finishing; piece goods, jig and pad dyeing; cot. weaving, cot. spinning and cot. carding, southern mills; cot. spinning, warping and twisting, New Eng.; finishing knit. cot. fabrics; dyeing cot. package and skein dyeing; worsted yarn spin.; cutting and sew. knit goods; woolen frame spin.; shoddy card.; garnetting; weaving colored cot. fabrics; worsted scouring and carding; carding combed cot.-rayon yarns; spinning combed cot.-rayon yarns; woolen mill overseers with southern experience; overseer to learn plush finishing.

SECOND HANDS finishing; carding; weaving; and finishing; Tex. graduate (female) to be trained as instructor.

MECHANICAL ENGINEERS, plant engineers and asst. plant engineers; industrial engineers; master mechanics. Chemists, chem. engineers and laboratory men for mills and for demonstrating and selling; woolen piece goods salesman (N. Y. City); wool salesman Boston and New Eng.; knit. mechanics for spring and latch needle machines and hosiery knit. mach.

LIST YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the textile mills. SEND US YOUR RESUMES.

CHARLES P. RAYMOND SERVICE, INC.
294 Washington St. Boston 8, Mass.
Telephone Liberty 2-6547
SPECIALISTS IN PLACING AND IN SUPPLYING TEXTILE MILL EXECUTIVES

INTERSTATE

TEXTILE EQUIPMENT COMPANY, INC.

OFFERS . . .

1—Harwood Bramwell Feed picker 24".
1—Davis & Furber mixing picker 24".
3—Sets of woolen cards.
4—Davis & Furber Spinners, 120 spindles each.
2—Saco-Lowell Ring twisters 224 spindles each.
28—Universal #50 Cone Winders 6 spindles each.
16—Universal #50 Tube Winders 6 spindles each.
6—Universal #80 Jumbo Cone Winders, 6 spindles each.

• INTERSTATE TEXTILE
Equipment Company Incorporated

508 W. Fifth St. — Charlotte 1, North Carolina
Phone 3-1894 — Cable-Intertex

WANTED

Man With Experience In

- FULLING
- SCOURING
- DECATING AND
- DRYING OF

Tubular Worsted Jersey

Large plant with excellent future. State experience.

P-7645, Textile World
330 W. 42 St., New York 36, N. Y.

POSITION AVAILABLE

FOR EXPERIENCED SUPERINTENDENT

Of worsted mill, completely integrated from grease wool to yarn. Give age, experience, any other important data. Replies will be held in confidence. Write

P-7393, Textile World
330 W. 42 St., New York 36, N. Y.

QUALITY CONTROL

Important dyehouse New York Metropolitan area needs young man for complete charge of quality control. Excellent opportunity for aggressive young man to advance in plant management. Some mill and converting experience desirable. Must be Textile School graduate, veteran or free of military service. Maximum age 30. State experience, salary to

P-7110, Textile World
330 W. 42 St., New York 36, N. Y.

WANTED

SUPERINTENDENT

Superintendent wanted for well-established Canadian woolen mill. Must be thoroughly experienced in all phases of manufacture in order to supervise picking, carding, spinning, weaving, dyeing, finishing. Housing available.

Reply stating experience, education, age, marital status, salary expected, to

P-7664, Textile World
330 W. 42 St., New York 36, N. Y.

POSITIONS WANTED

(Continued from page 294)

TEXTILE ENGINEER 24 years experience as technician and director, dyeing, weaving, fabric construction and creation. Plane, Nobby, Jacquard. Did build Textile plants abroad. Language: English, French, Italian, German, Polish. PW-7647, Textile World.

SELLING OPPORTUNITY WANTED

DETROIT MANUFACTURER'S Agent—Desires to represent Textile Mill capable of producing Synthetic Fabrics for Automotive upholstering. Have valuable contacts established over 15 years sell Automotive woolens. RA-7623, Textile World.

SPECIAL SERVICE

NEW SAMPLES developed, woven on own loom to your specifications. M. Goldschmidt, 93 River St., Paterson, N. J.

BUSINESS OPPORTUNITY

Wanted
qualified manufacturer to make and market completely new Christmas Tree decorations requiring only cotton cloth, one pattern, and simple sewing. Unrelated to any other item on market, and startlingly beautiful. Its name alone is self-explanatory and self-advertising. May be retailed inexpensively in unrivaled market. BO-7442, Textile World.

Additional Positions Vacant Advertising on page 297

FOR SALE

PARTIAL LIST IMMEDIATE DELIVERY

1—**REBUILT P&W** 66" **BRUSH** with 3 Multiple Brush Holders having each 6 Brush Slats and One Multiple Sand Holder with 6 Sand Slats, with 2 holders at bottom of frame and 2 mounted at top.

1—**NEW D&F IRON BREAKER CARD** 60x60 with Bramwell B3 Feeder, #36 Metallic Breast, 9 Aluminum Workers 7" dia., 9 Steel Tubing Strippers 2-1/4" Dia., Metal Tumbler 14" dia., Fancy Aluminum 10" dia., Iron Doffer 30" dia., with #8 Comb. Grid Bars for Cylinder, Breast & Tumbler. Covers over Main Cylinder, Fancy & Breast. Equipped with 5 Hp. 220/3/60 Motor V-Belt drive & #5 American Pulley Reduction Unit. T-Slot Card.

1—**D&F TAPE CONDENSER** 60" Single Rubb, 4 Bank, Rubber Aprons 66" long x 12-1/2" on centers, chain drives, spool drums take 50" spool with V Belt drives, Leather Tapes, shallow groove, unit equipped with 96 ends with extra spare set 120 end dividing rolls.

1—National Model **E LOOP DRYER**, Revolving Stick 103" width, age 1949, Aluminum Insulated Housing, 8 Air Fin Blowers, Overall 40' 6" long x 15' 10" wide x 11' 3" high, Motors, Reeves, etc.

1—**H&W YARN CONDITIONER** Type St2, Insulated Housing, Monel Metal Lined Inside, holds 2 trucks, equipped with automatic controls, temperature and humidity, Inside dimensions 64" x 39" x 64" with 110 volt Lighting Circuit and 1/3 Hp. motor driving fan. 1951 Model.

2—**P&S BOX DUSTERS** Model #550 age 1944-46, beater straight 69-1/2" long 38" diameter, steel screen under beater with 1/2" x 1" slots. Stock removed at rear thru 13" x 15-1/2" outlet.

8—Whitin **SCOTCH CENTER DRAW BROAD BAND FEEDS** 48" with Ji Card Conveyors, Model F1 finisher feed tables right hand, Metallic Lickerin, Feed rolls, Units built 1948 hardly used.

2—**REBUILT C&M type CEILING FOLDERS** 90" operating width, Length of Fold Adjustable, Folder arms 54" long, equipped with overhead measuring roll, 4 figure Veeder-Root Counter, gear driven units with 1 Hp. 550/3/60 A.C. motors.

6—**C&K W3 LOOMS** 76" age 1945 automatic 4x1 Multipliers, 25 Harness Head Motion, Worm Takeup, Center Filling Fork, E.W.S.M. with 1-1/2 Hp. 550 volt A.C. Motors.

32—**C&K W1 LOOMS** 82" automatic 4x1, 25 Harness Head Motion, Ball Bearing Crank and Bottom shaft, Center filling fork, Friction Letoff, E.W.S.M., Temples, 1 Hp. 550/3/60 A.C. Motors with 30" Beam Flanges.

1—**REBUILT** Gessner **DOUBLE ACTING** 78" **NAPPER** 18 Rolls gear driven, Expander Pulleys for varying speed of working rolls, Folder Takeoff, Double push button station on either side. Motor driven with A.C. 3/60 cycle motor.

1—**REBUILT** Voelker **ROTARY STEAM PRESS** 66" Double Bed Unit with Copper Shields, Steam Drum 16" diameter, has been drawn filed and reknurled, Face and Back Brush, Rollup head and Folder, Motorized with A.C. 220/3/60 A.C. thru V-Belt drive.

1—**REBUILT VAN VLAN QUETSCH** 2 roll unit top roll Rubber Covered 65" face x 6" diameter, bottom roll Brass 65" face x 6-1/2" dia., Rolls Ball Bearing Mounted, Copper Size Pan underneath rolls with brass immersion roll, size pan adjustable by lever, equipped with 2 brass and 1 Stainless Steel carrying roll, square bar letoff, slip belt windup, V-Belt drive with 220/3/60 A.C. motor. Stainless Steel 60" DRY CAN Roller Bearing mounted overhead.

5—Warp Compressing Machine Co. **JACKSPOOLERS** 43-1/2" bottom drum leather covered, grooved metallic compression roll, rack and gear operated, 40 end Bobbin creel, Veeder Root counter, broken end detector and signalling device with predetermined yardage stop. Built 1948. Hardly used.

1—Whitin **WOOL SPINNING FRAME** 4" Gauge equipped with New Ring Rails and 3" rings, 180 Spindle unit accommodating Bobbin 10" overall, Spool drums 56-1/2" taking off 30 good ends, Steel separators, wood thread boards, Silent Chain drive with 7-1/2 Hp. 220/3/60 A.C. Motor.

2—**D&F HEAVY DUTY WARP REELS**, PINLESS 92" Brass Plates, with Beamer, Neck & Reed Stands, Compressor Low Back Type.

2—Universal #44 **ROTOCONERS** 1949/50 Model, 60 Spindles each Metallic Rolls, Underneath Supply, Wind on Paper Cones 8"36", Motors 220/3/60 cycle.

McDOWELL ASSOCIATES, Inc.
2568 Park Avenue — Bronx 51, New York
Tel.: MElrose 5-6741

Are you a young Asst. Superintendent who wants "opportunity"?

Position available in large American textile company in one of their Latin American mills, for a man with approximately following qualifications.

A. Textile School or College Graduate.
B. 10 years practical experience in an efficient American filament rayon weaving plant.
C. Has come up through the ranks and now is Asst. Superintendent (or Superintendent) but is not satisfied—not getting ahead fast enough.
D. 35 years of age or younger.
E. Realizes the opportunities that exist for greater earnings, less income taxes and quicker advancement in the foreign field and who wants to go abroad.
F.. Can be single or married but, if married, his wife must be able to adjust to foreign surroundings.

If you've got these qualifications—a good starting salary, a wonderful opportunity and a permanent job (with liberal pension benefits) is available.

Write Box no. giving descriptions and photograph of yourself. Strictest confidence assured.

P-7510, Textile World
330 W 42nd Street, New York 36, N. Y.

WANTED
ASSISTANT FINISHER
With experience on face finish woolens. Location in New England. Give details of work experience and state salary expected.

P-7466, Textile World
330 W. 42nd St., New York 36, N. Y.

FOR SALE

1—Portland Enclosed Stainless Steel Dye Box 14' wide x 40" deep, Age 1951
1—Van Vlaanderen Pneumatic Embossing Calender, 54" wide, Treebark, 7-ton, Age 1951
2—V.V. G.L. Rope Washers, 18 compts., Age 1948
1—Stainless Steel Hi-Speed Slack Rope Washer, 1948
5—Rice, Barton & Fales Print Machines, 4-10 colors
1—Textile Friction Calender 54" wide, 40 ton pressure
1—Stainless Steel Warp & Beam Dyeing Unit
1—Smith Drum 1000 lb. S.S. Package Drying Unit, 1948
1—Johnson Slasher 7 S.S. Drums, 66" wide
60—Whitin Cotton Cards 40" wide, 27" doffer
220—Draper D Looms 40"-64", motor driven
2—Morrison Duplex Controlled Shrinkage Ranges 50" wide, 1947

MILLS FOR SALE

Modern Rayon & Cotton Spinning & Weaving Mill, 15,000 spindles, 300 looms, with mill village.
Cotton Spinning & Weaving Mill, 30,000 spindles, 350 looms
Cotton Carded Yarn Mill, 8's-20's, 10,000 spindles
Dyeing, Finishing & Printing Plant

Copper Rollers for Sale—400—60" wide, 15-17" circ., X-bore; 150—40-44" wide, 15-17" circ. W-bore; 200—42-44" wide, 20-27" circ. H-bore; 80—40-44" wide, 19-22" circ. F-bore.

Telephone #Cortlandt 7-1591

REPUBLIC TEXTILE EQUIPMENT CO.
40 WORTH STREET NEW YORK CITY
REFINANCING · APPRAISALS · PURCHASE · SALE · LIQUIDATION OF MILL PROPERTIES

S&K Where your $$$$ buy MORE

78—S3 AUTO C&K LOOMS 52" 2x1

24—S3 AUTO C&K LOOMS 54" 2x1

1 3 Color-60" Print Machine
3 Hercules 48"-60" Extractor
300 Auto Drapers 43" to 76" cloth
16 C&K Auto Bob Changers 2x1—72" R.S.
12 C&K 4x4—54" R.S.
40 C&K Woolen Looms 72" to 110" R.S.
1000 Electro Rods 66" to 133"
1 V.V. 40'-60" Tenter Frame, Enclosed Gears
1 V.V. 60'-66" Palmer Tenter, Unit, Complete
1 36" Self Balancing Extractor
1 W&J Tenter Frame 90" W 30' L
1 W&J Tenter Frame 54" W 30' L
1 2 Roll 60" Quetch—V.V.
1 Set of 8—68" Copper Cans
1 New 80½ Beamer
1 60" wide Pin Tenter Frame 60'—W&J
1 Paterson Examiner, 72" wide
1 72" Park Woolson Decater
1 Set 10 Dry Cans 48" face
6 Dye Boxes S.S. lined 8'—10'—12'
1 Jostrom fabric conditioner 64"
1 19 can Butterworth dryer 72"
3 V.V. Button Breakers 1—60" 2—50"
4 Three (3) Roll Padders 45"
30 50" Dry Cans
4 Johnson Slashers—7—5—3 Can 66"
2 90" S.S. Jiggs
4 50" S.S. Jiggs
1 72" Greige Washer with Squeeze Rolls 24' long
5 Atwood 5B Twisters
9 Atwood Single Deck Utility Spinners
8 Sipp Warpers and Winders
20 #90 Universals
4 Oswald-Grundy 46—Spindle Cop Winders
5 Foster-Coners 75A
Hy-speed Sippwarper

STAVE & KESSLER
106 KEARNEY ST. P. O. Box 1611 Paterson, N. J.
Phone ARmory 4-7486

100—S3 LOOMS C & K—56" & 58" LARGE SHUTTLES @ $250.00
20—D.D. ATWOOD UTILITY Uptwisters @ $350.00
1—H&W YARN CONDITIONING BOX @ $600.00
100—NO. 50 UNIVERSAL CONERS GEAR GAINERS "A"—"L" DRIVES S. S. ROLLS—TROUGHS—PINEAPPLE
25—JUMBO DOUBLERS—4" RINGS— 110 SPINDLES—6" TRAV. 1 LB. & ½ LB. PACKAGE
100M—FIBRE HEAD SPOOLS 4 9/16" TRAV. X 3" HD
25M—FIBRE HEAD SPOOLS 5¼" TRAV. X 4¾" HD

PENNSYLVANIA SPOOL & EQUIPMENT CO.
53[illegible] N [illegible]ULTON ST. ALLENTOWN, PA. Phone [illegible]-7545

UNIVERSAL #50 WINDERS
REBUILT GUARANTEED
Coners, tubers, pineapple coners built to your specifications.
ALSO
64—1 H.P. A.C. Motors 3/60/440—1200 R.P.M.
2—Sargeant Ballers—11" Gauge
8—Fidelity Reels
6—S.S. Dye Tubs Rodney Hunt, 6'6"
2—P&W 2 and 3 Blade Davidson Shears
3—Pin Tenter Dryers
GAINES TEXTILE MACHINERY CO., INC.
141 West 17th St. New York 11, N. Y.

TEXTILE AUXILIARIES
FOR SALE, IN OUR WAREHOUSE — RECONDITIONED MACHINERY
1—Butterworth 60'x50" Tenter Frame with W. & J. #5 S.S. inserts and plates chain with 4 fan Proctor & Schwartz insulated steel housing (housing can be bought separately)
1—6 Box Continuous Naphthol Dyeing Machine, 6 rubber nips, screw and lever set, sprocket and chain drive, immersion and sky rolls and ceiling folder
1—72" S. S. Continuous Vat Dye Range, practically new
We also carry in stock Kiers, Squeezers, Padders, Quetches, Dry Cans, Dye Jiggs, all widths; also, A. C. and D. C. Motors, from 1 H. P. to 100 H. P. Also, spare Tenter Chains. Ask for our detailed list. If it's not in stock we can get it.
Office—15 Ormsbee Ave. Warehouse 146 West River St.
Telephone: DExter 1-9650 DExter 1-8837
PROVIDENCE, R. I.

Research and Development For The SMALL MILL
Practical aid for those who wish to UP GRADE PRODUCTION at minimum expense through new machinery, mill reorganization, etc.
Interested and experienced in modification of cellulose fibers by chemical and physical means.
Staff equipped to teach process or procedures recommended.
Bolen Research Associates
2613 Helen St. Augusta, Georgia

CORDUROY WEAVING Wanted
Large Cotton Textile Converter interested in Production of Mill weaving greige goods Corduroy, or willing to change over. Substantial volume assured with continuity. This is an excellent opportunity to consummate a valuable connection of lasting importance. Financial assistance considered.
BO-7642, Textile World
330 W. 42 St., New York 36, N. Y.

TRICOT MANUFACTURERS
HAVE YOU DIFFICULTY ANALYZING YOUR PATTERNS?
Just send them to
THOMAS BALLAN
214 East 168th Street, Bronx, N. Y.
You will get a detailed description concerning construction and yarn for a reasonable fee.

CONSULTANT
With practical and Technical Textile mill experience has available time for additional assignments, specializing in production, quality control, costs, incentive systems, survey of mills and equipment, relocations. Strictly confidential service.
SS-7654, Textile World
330 W. 42 St., New York 36, N. Y.

FILTER CLOTH
11¼ oz. per Sq. Yd. 48 x 15 count. 2 x 3 ply. 72" wide—Unshrunk. Send for sample.
PABST BREWING CO.
917 W. Juneau Ave. Milwaukee 1, Wis.

PROFESSIONAL SERVICES

EATON & BELL
Patent Attorneys
904 Johnston Bldg., Charlotte, N. C.
1149 Munsey Bldg., Washington, D. C.

"SEARCHLIGHT" IS Opportunity Advertising
—to help you get what you want.
—to help you sell what you no longer need.
Take Advantage Of It
For Every Business Want
"Think SEARCHLIGHT FIRST"

DURABLE

LATE-TYPE

BROAD GOODS NARROW FABRICS & TRICOT MACHINERY

at a **FRACTION** of original cost!

SOME MACHINERY BRAND NEW!

30—Late type Reiner & WHITIN TRICOT MACHINES

1—1446 Cocker TRICOT WARPER
Will take 21" x 21" beams. Auto. let-backs. Variable speed drive.

24—72" C&K S-6 LOOMS
Motorized. Automatic.

30—UNIVERSAL #50 CONERS
6 spindles each. Motorized. 3-30 gear gain.

2—FOSTER SIZING MACHINES
Motorized. Excellent condition.

1—4 roll RIBBON CALENDAR
18" face. 2 steel, 2 paper rolls. Gas heated.

48—C & K—S-6 1949-1950 LOOMS
Complete with beams, heddles, quills, harness frames, etc. 56" between swords, 2x1 box, 20 harness #7 Dobbies 15/32 gauge double index. 1 H.P. G.E. motor. Roller bearings crank & bottom shafts. Warp stock 6 bank KA Elec. 3 shift Veeder Root pick counters and cut meters.

2—1950 REINER 82" TRICOT WARPERS

1—1943 WARP COMPRESSOR
800 end. 4 lb. cones

96—56" C&K S-3 LOOMS
Motorized. Complete with all equipment.

40—1952 ATWOOD UNIRAIL D.D. TWISTERS—1 lb. pkge.
BRAND NEW!
28—184 SPINDLES EA.
12—220 SPINDLES EA.
Erected but NEVER USED. Brand new take-up shafts spindle bobbins and stainless steel bobbin trays.

2—1951 Sipp Eastwood WARPERS
1—101" horizontal. Take 28" flange beams.
1—direct to take 54½" beam, 36" flange dia.

24—Whitin Schweiter SPINDLES
1948-49. Auto. quilling. Take 10 1/8" bobbins.

6—Rebuilt FLETCHER LOOMS
Standard 15'—8". Motorized. 42" & 18" beams.

6—Atwood 10B Doubler TWISTERS
Motorized. 100 spindles ea. 1 lb. pkge. 6" spacing.

4500 sq. ft. HUMIDUCTS and AIR CONDITIONING
Comp. with compressors and all motorization.

52—44" DRAPER X-K's
Motorized, automatic. Comp. with beams, drop wires, heddles, etc.

1—1951-860 end CONE CREEL
Magazine type to take 4 lb. cones.

20—Universal SIZING MACHINES
Motorized. Excellent condition.

8—1948 Atwood D.D. TWISTERS
Mod. 110. Motorized. 208 spindles ea. 1 lb. pkge.

7—1949 Atwood Motorized REDRAWS
High speed. 68 spindles ea. 1 lb. or ½ lb. pkge.

2—1949 Atwood D.D. motorized UTILITY TWISTERS
204 spindles ea. ½ lb. pkge. 5" spacing.

9—Atwood UTILITY TWISTERS
240 spindles ea. Individually motorized.

All items subject to prior sale.

WRITE—PHONE—OR WIRE, TODAY!

Wm. Rabinowitz & Sons
TEXTILE MACHINERY, BOBBINS & SUPPLIES
214 - 222 Hamilton Street Phone HEmlock 3-7497 3-7498 Allentown, Pa.

MILLER MACHINERY CO.
66 RAILROAD AVE. PATERSON, N. J.
Tel. Sh 2-5467-8

Textile Machinery and Supplies
BOUGHT AND SOLD
Warpers • Winders & Quillers
Looms

FOR SALE
MACHINERY and EQUIPMENT
of
ONEIDA BLEACHERY
NEW YORK MILLS, (NEAR UTICA) NEW YORK
WRITE FOR DESCRIPTIVE CATALOG

James E. Fitzgerald 10 PURCHASE ST., FALL RIVER, MASS.
Telephone 8-5616
SPECIALIZING IN BLEACHING, DYEING AND FINISHING MACHINERY SINCE 1920

LIQUIDATING

RIVERVIEW FINISHING CO., PATERSON, N. J.

1—Hennekens Boil Off, new 1948
1—National 10-fan Loop Dryer, revolving sticks, excellent
1—V. V. 54" Embosser, 2-roll
5—12' S. S. Dye Becks
2—60" Eastwood Floppers
1—V. V. Decatizer 53"
2—Tenter Frames, 40'-30', S. S. Clips
1—V. V. 3-roll Calender, 45"
3—Beamers 76"-55"-50"
2—Copper Jacketed Mixers, 200 gal. and 75 gal.
2—Tubers 50"
1—50" Inspection Machine
1—50" Padder 2-rubber rolls
1—50" Button Breaker
3—68" Progressive Hyspeed Examining & Measuring Machines, Varie Speed & Reverse
2—Merrow Sewing Machines
3—Extractors, 2-60", 1-48"
1—V. V. 50" Scutcher
1—MacBeth Color Matching Lamp, 1950
3—76" all S. S. Jiggs
2—60" S. S. Lined Jiggs
1—V. V. 64" Palmer & Quetch
5—Textile Squeeze Sets, 96" long, 2-rubber rolls 19" and 12" dia. roller bearings
1—Set 8 Copper Dry Cans 84"
1—Set 9-72" Copper Dry Cans
1—Set 6 Copper Dry Cans 50" x 30" dia.
1—50" Wooden Expander

FOR ALL INFORMATION—WRITE, WIRE OR CALL

A & M BLANK CO., INC.

301-313 East 22nd St. (at 7th Ave.) Paterson, N.J.
SHerwood 2-1367-8

BIALEK'S BEST BUYS

DRAPER "XD", DOBBY, 1952, WITH DIEHL DRIVE

WHITING AUTO QUILLERS 1947, 1948—EXCELLENT CONDITION

ABBOTT AUTO. QUILLERS, 1951
COCKER WARPER & CREEL
DRAPER "XK," CAM. 42".
JOHNSON SLASHERS
TERRELL BOBBIN STRIPPER
S-3, 2x1, 56" RS, AUTO. Shuttle Change
C & K 2x1, 54" RS, AUTO. Bobbin Change
ENTWISTLE WARPER & CREEL

THEODORE BIALEK & CO.

396 STRAIGHT ST.
PATERSON, N. J.
LAMBERT 3-5886-7

6704 EMPIRE STATE BLDG.
NEW YORK 1, N. Y.
LONGACRE 3-4978-9

LIQUIDATING — For Immediate Removal

PARTIAL LISTING

14—All Stainless Steel Dye Becks, 8'-14', S.S. Reels, Rake Beams, & Pony Reels, Motors & Reducers.
2—Pin Tenter Frames, 80'x62", Elect. Guiders, Quetches, Etc.
1—Finishing Calender 3—60" Rolls, Ball Bearing.
1—National Loop Dryer, 8 Fan, Aluminum Housing, Etc.
1—Palmer - Tenter - Quetch Unit, 64" Wide, Synchronized.

WE WELCOME YOUR INQUIRIES

INDUSTRIAL PRODUCTS *of America*

140 MARKET STREET,
PATERSON, NEW JERSEY
PHONE: SH. 2-6614-5-6
CABLES: TEXINDUS

SOUTHERN AFFILIATE

I P A SOUTHERN, INC.

S. CAROLINA NAT'L BANK BLDG.
GREENVILLE, S. C.

FOR SALE

SARGENT WOOL SCOURING BOWLS—Train of 5—30" in excellent running order with sectional rubber rolls. Last bowl lined with special impervious material for bleaching and carbonizing equipped with pumps and separate gear motor drives for rakes and squeeze rolls.

5—48" Sargent Wool Scouring Bowls also in first class running order.

1 Philadelphia stock dryer 67' long x 10'6" wide with 6' woven wire conveyor complete with feeder.

FRED WHITAKER COMPANY
RIDGE AVE. & SCOTT'S LANE
PHILADELPHIA, 29, PA.
GE 8-6100

FOR SALE

2 Rodney Hunt Stainless Steel Slack Loop Washers #2507—2508 Inc. Motors $3500.00 each

Philadelphia Loop Dryer 60"x46' #701 Steam Coils - Traps - Motors - Variable Reeves $2500.00

60" Birch Scutcher and Extractor Inc. 15HP Nash Vac. Pump Motor Controls. $1250.00

Motors—3 Ph 220V 60Cy Above prices or best offer.

15—S.S. Rolls 72"x5".....$35.00 each

R. A. BRIGGS & COMPANY
Grayslake, Illinois

FOR SALE
96 TRICOT BEAMS

21" length—21" flange diameter
Made by HAYS & HUBBARD
Used, in excell. cond.

FS-7641, Textile World
330 W. 42 St., New York 36, N. Y.

FOR SALE
POWER SPLITTER For PILE FABRICS

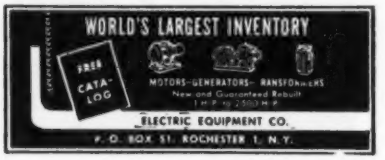
Variable Speed Drive
68" Roller With Motor
REBUILT LIKE NEW

Box 899, Realservice, 110 W. 34 St., N. Y.

For Sale
3-5 TON ALLEN KIERS

Complete with heaters, pumps, and motors. In very good condition and now operating in Rhode Island plant. Inspection by appointment. Subject to prior sale.

FS-7392, Textile World
330 W. 42 St., New York 36, N. Y.



FOR SALE
1—P & W SEMI-DECATER

24 x 72 inches

FS-7463, Textile World
330 W. 42nd St., New York 36, N. Y.

BRASS
PIN-PLATES
All Sizes
SEND US OLD PLATE FOR QUOTATION
PUT YOUR PIN TENTERS IN TIP-TOP CONDITION
● Pins in Stainless, Monel, Plain Steel.
All Diameters Any Length
SOUTHERN TEXTILE WORKS
P. O. BOX 426 ANDERSON, S. C.

Quick ANSWERS to your business problems . . .

HUNDREDS of business problems can be quickly and easily solved through the use of the Searchlight Section of this or other McGraw-Hill publications.

The Searchlight Section is classified advertising; you can use it at small cost, to announce all kinds of business wants of interest to other men in the fields served by these publications. It is the accepted meeting place of men with business needs and the men who can fill those needs.

When you want additional employees or a position, want to buy or sell used or surplus equipment, want products to manufacture, seek new capital or have other business wants—advertise them in the Searchlight Section for quick, profitable results!

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Electrical Merchandising
Electrical World
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Engineering and Mining Journal
E. & M. J. Metal & Mineral Markets
Engineering News-Record
Factory Management and Maintenance
Fleet Owner
Food Engineering
Nucleonics
Power
Product Engineering
Textile World
Welding Engineering

Classified Advertising Division

McGRAW-HILL PUBLISHING CO., Inc.

330 West 42nd Street

NEW YORK 36, N. Y.

PREPARATORY

12—Harwood, Sargent 36"-48" Picker Feeds
2—60" Card Feeds
9—D. & F. & Sargent 6, 12 Bar Mixing Pickers
2—48" D. & F. Fearnought Pickers
6—18"—24" Shoddy or Waste Pickers
2—36"—48" Burr Pickers
2—Dusters, Cone or Box type
4—18"—36" Ceiling Condensers

WINDING & WARPING

UNIVERSAL 50's & 90's REBUILT
1—Foster Mod. 12 Skein Winder
1—Foster Mod. 101 Cone Winder
1—Sargent 16 sp. Ball Winder
1—Globe Ball Warper
4—D. & F. Pin or Pinless Warper

FINISHING

1—Kenyon 72", 10 pass Cloth Dryer
1—Gessner Mod. 20 Press, 1950
1—P. & S. Truck Skein Dryer, 1939
1—Set (6) Copper Dry Cans, 70" x 36"
1—Wetting-Out-Tank, S/S Lined, 62"
1—P. & W. 72" Steam Luster Machine
1—Crab, 3 bowl, 72", Yorkshire Type
2—Birch Doub. & Tack. Mach., 92"
2—Teasel Gigs, Doub, Cyl., 60"
1—P. & W. 4 cyl. Brush, 66"
1—P. & W. Cloth Doubler, 66"

MISCELLANEOUS

1—72" Coating Machine, Chain Dr.
4—Macbeth Color Matching Lamps
1—Singer Overlocker

FRANK W. WHEELER CO.

1837 E. Ruan St. Phones: Jefferson 5-4771-4772 Philadelphia 24, Pa.

Reputable Dealers for over a quarter of a century

HOSIERY MACHINES

used and rebuilt
KNITTERS—RIBBERS—LOOPERS
CYLINDERS—DIALS—TRANSFERS
HOSIERY NEEDLES AND PARTS

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N. W. Cor. Hancock & Somerset Streets
Phila. 33, Pa.

DOYLE & MILLER

Main & Pensdale Street
Philadelphia 27, Pa.

Johnson & Bassett large package mule
285 Spindles 2½" gauge
Johnson & Bassett mules 2" gauge 324 spindles
Two Belgium Cone dusters 10'-0"
Five heavy slat aprons made up on # 62 chain for use in stock dryers and feeds

---

FOR IMMEDIATE SALE

1—Smith Drum—1000 lb. package dryer. ⅚ Tubes fully automatic complete with 3 Trucks—220V—New 1948

1—Smith Drum—individual package extractor 15 package capacity—automatic—220V—New 1949

1—Standard Fabricators Automatic Rounding and Cupping Machine—2 cups—110V—New 1950

UNITED ELASTIC CORPORATION
Easthampton, Massachusetts

WANTED

WANTED
40-40" or 42" Model P
DRAPER LOOMS.
Give complete description and price.
W-7512, Textile World
330 W. 42 St., New York 36, N. Y.

Wanted
by Textile Finishing Plant:

Used Curing box — or baker, for curing of thermal setting textile resin finishes

SPECIFICATIONS: Approximately 72" wide, temperature to reach and automatically to maintain approximately 320° F plus minus 40° F.

Capacity between 50 and 75 yards of goods

W-7703, Textile World
330 W. 42 St., New York 36, N. Y.

New "Searchlight" Advertisements

received by May 18th will appear in the June Issue subject to space limitations.

Address copy to the Classified Advertising Division

TEXTILE WORLD
330 West 42d St., New York 36, N. Y.

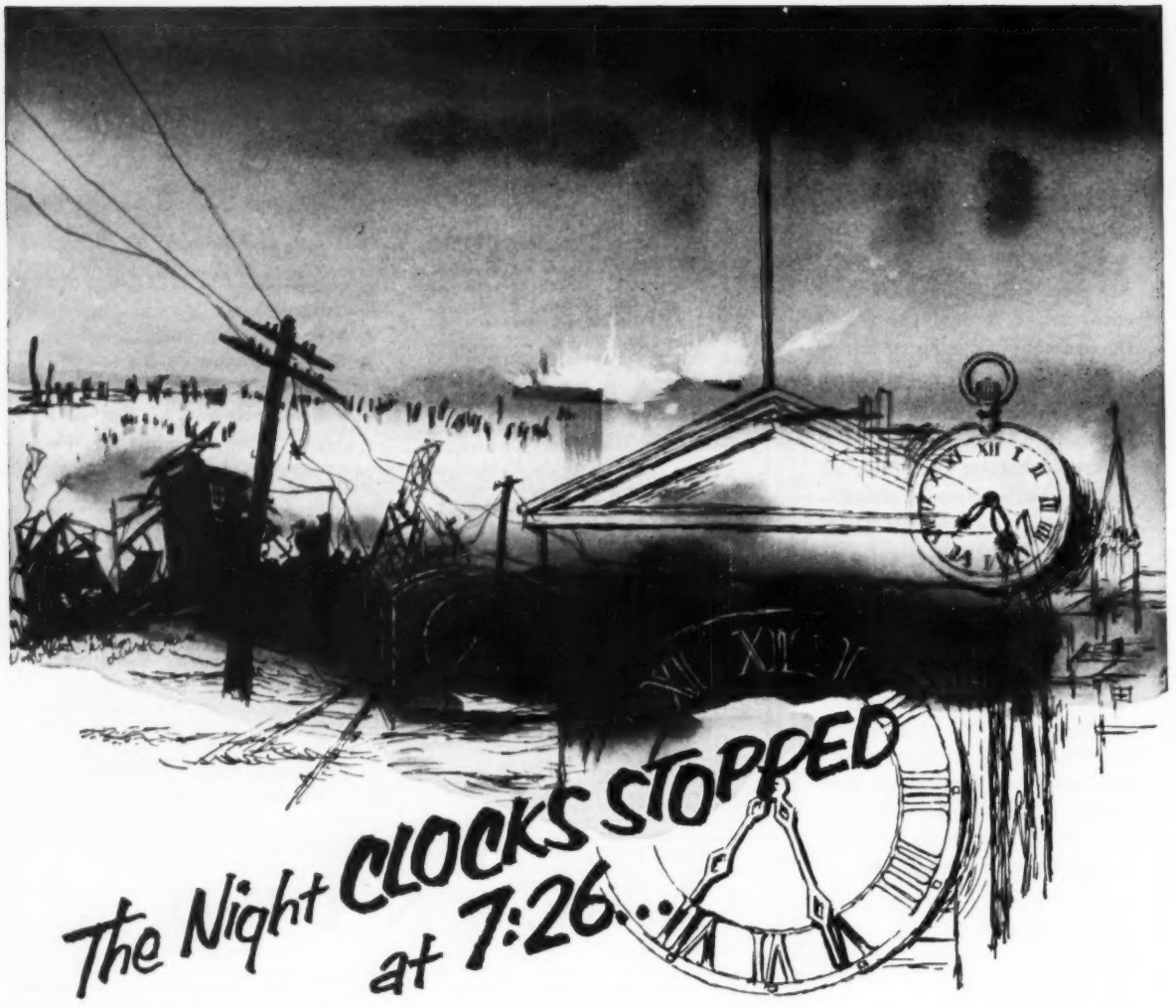
DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.
Established 1919

WANTED
EIGHT LOOMS C&K
100-110" Reed Space 4x1 Automatic
Preferably Modern C4 or W3

W-7501, Textile World
330 W. 42 St., New York 36, N. Y.



Some 9,500 people were in South Amboy, N. J., that drizzly evening in 1950. At the waterfront, longshoremen were transferring the last of 12 freight cars of ammunition to lighters that would carry it to a waiting vessel in Raritan Bay.

But the City Hall clock never got to 7:27—and the freighter's deadly cargo never got loaded. Explosions shattered windows over a radius of 12 miles; and hundreds of people looked at their arms and legs and saw that flying daggers of glass had stabbed them.

At dawn, 312 of the injured had been counted.

★ ★ ★

Such disasters have happened many times before in America. They could happen again. And *if* they do—and *when* they do—there must be blood plasma on hand to take care of the injured. For blood saves lives!

But blood cannot be mined or manufactured. It must come from the veins of healthy men and women. Men and women who feel concern for a suffering neighbor. So give blood—now!

Whether your blood goes for Civil Defense needs, to a combat area, or to a local hospital—this priceless, painless gift will some day save an American life!

Give Blood Now

CALL YOUR RED CROSS TODAY!

National Blood Program

Business Executives!

✓Check These Questions!

If you can answer "yes" to most of them, you—and your company—are doing a needed job for the National Blood Program.

- ☐ Have you given your employees time off to make blood donations?
- ☐ Do you have a Blood Donor Honor Roll in your company?
- ☐ Have you set up a list of volunteers so that efficient plans can be made for scheduling donors?
- ☐ Have you arranged to have a Bloodmobile make regular visits?
- ☐ Has your management endorsed the local Blood Donor Program?
- ☐ Have you informed employees of your company's plan of co-operation?
- ☐ Was this information given through Plant Bulletin or House Magazine?
- ☐ Has your company given any recognition to donors?
- ☐ Have you conducted a Donor Pledge Campaign in your company?

Remember, as long as a *single* pint of blood may mean the difference between life and death for *any* American . . . the need for blood is *urgent!*

Index to ADVERTISERS Keyed by PRODUCT

A HELP TO YOU. The reader will find that this unique TEXTILE WORLD index, particularly if consulted for two or more consecutive issues, affords a surprisingly complete source of information on the latest products and services available to the textile industry. Its comprehensiveness is the result of the fact that TEXTILE WORLD, having the largest circulation and highest readership of any textile-mill magazine in the world, carries the largest volume of advertising.

HOW TO USE. First, look in the table below and find the letter that designates the class of supply or service that you currently need. Then consult in the index the page numbers that are followed by that letter.

A. Air Conditioning, Air Cleaning
B. Building Construction and Maintenance, Paints, Yard Equipment, Water Supply
C. Chemicals and Dyestuffs
D. Cleaning Equipment
E. Dyeing, Finishing, and Cloth-Room Equipment and Supplies
F. Electrical Equipment—Motors, Controls, Lighting, Etc.
G. Fibers, Yarns, Mills, Finishing Companies
H. Fluid Handling.—Compressors, Pumps, Piping, Valves, Fittings
K. Instruments: Measuring, Metering, and Weighing Apparatus
L. Knitting-Mill Equipment and Supplies
M. Lubricants and Lubrication Equipment
N. Management Services—Factors, Consulting Engineers, Insurance, Personnel Facilities, Plant Sites, Etc.
O. Materials and components for Machinery and Equipment
P. Materials Handling, Packaging, and Shipping Facilities
Q. Power Generation and Transmission (see also Electrical Equipment)
R. Weaving and Warp Preparation Equipment and Supplies
T. Yarn-Production, Twisting, and Winding Equipment and Supplies

An * indicates additional data in the 1951-52 Pre-Filed Textile Catalog. This index is published as a convenience to the reader. Great care is taken to make it accurate, but Textile World assumes no responsibility for errors or omissions.

Ainsworth Mfg. Corp., Mult-A-Frame Div.	142	B
*Air Perme-Ator Mfg. Co.	248	A
Aldon Spinning Mills	287	G
Alemite Div., Stewart-Warner Corp.	148	M
*Allis-Chalmers Mfg. Co.	17 to 20	F Q
Alvey Conveyor Mfg. Co.	186	P
American Air Filter Co., Inc.	70	A
American Blower Corp.	36	A
American Cravon Co.	287	E L R
American Efird Mills, Inc.	290	G
*American Lava Corp.	173	L RT
American Lumber & Treating Co.	230	B
*American Moistening Co.	8	A
*American Monorail Co.	223	P
American Steel & Wire Div.	175	O
American Viscose Corp. (Yarns)	179	G
American Viscose Corp., Textile Chem. Dept.	136	C
Antara Chemicals Div. of General Dyestuff Corp.	15	C
Armco Steel Corp.	257	O T
Armstrong Cork Co.	58-59	
Arnold, Hoffman & Co.	75	C T
*Atkinson, Haserick & Co.	22 to 27	
Atlantic Chemical Corp.	247	C
Atlantic Rayon Corp.	252	G
Atlantic Steel Co.	232	O
Automatic Transportation Co.	44-45	P
Bahnson Co.	203	A
Baker & Adamson Products, General Chemical Div., Allied Chem. & Dye Corp.	159	C
Baldwin-Duckworth Div. of Chain Belt Co.	254	O P
*Barber-Colman Co., Textile Div.	285	N
Barnes Textile Associates, Inc.	286	N
Bausch & Lomb Optical Co.	248	
*Becco Sales Corp.	72	C
Benjamin Electric Mfg. Co.	169	F
*Bersworth Chemical Co.	275	C
*Blickman, Inc., S.	279	E
*Brinton Co., H.	185	L
Bristol Co.	231	K
Brush Electronics Co.	134	K
Bryant Chemical Corp.	144	C
*Buffalo Electro-Chemical Co.	72	C
*Buffalo Forge Co.	253	A
Burlington Engineering Co., Inc.	21	F
*Butterworth & Sons Co., H. W.	132	F

LANE Baskets are Materially Better

Here's why

- **Over-size casters for easy running of any load**
- Full capacity bodies
- Hardwood bottoms—dual riveted—stronger than steel
- Heavy duck sleeves for holding body to frames
- Rounded bottom rivets for smooth surfaces
- Self-embedded rivets in duck prevent sharp cutting edges

Over-size casters on *all* Lane basket trucks for easy running under *any* load—that's why employees prefer Lane. All casters are securely lock-mounted on extra wide *longitudinal* shoes designed specifically to take the load—they last longer.

But did you know you can buy a *quality* Lane truck (caster for caster) for less than most other brand canvas trucks?

Investigate Lane baskets, hampers and trucks today and see for yourself why Lane is the standard of quality.

Clip the coupon below.

Lane

THE LANE BASKET TRADE MARK

W. T. LANE & BROS., INC. Poughkeepsie, New York

Please send me further information on Lane baskets, hampers and trucks.

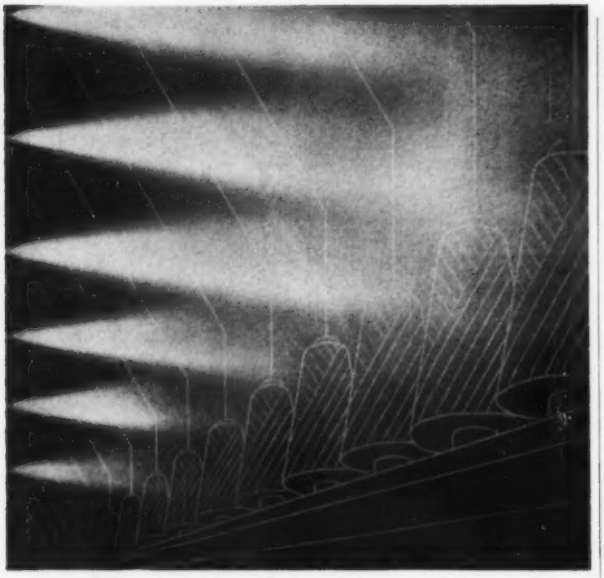
Name .....

Company .....

Address .....

Town ..... Zone ..... State .....

My distributor is .....



for trouble-free HUMIDIFICATION

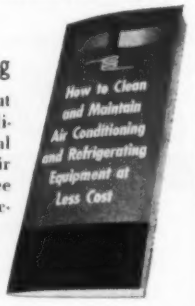
Almost all water used in humidifying systems contains a certain amount of minerals and bacterial organisms. These are the troublesome contaminants that produce lime scale and slime. Allowed to accumulate these deposits cause frequent breakdowns and costly damage to expensive equipment.

One sure sign that humidifiers need attention is when slime is blown past baffles into the plant. Another shows up when slime or scale clogs lines and spray jets. Still others when overflows clog; when disagreeable odors rise from sump tank.

You can stop slime and scale troubles before they start. Or you can cure them if they have taken hold by sending for the Oakite Booklet "How to Clean and Maintain Airconditioning Equipment".

HANDY GUIDE yours for the asking

This handy little booklet tells all about trouble-free maintenance of spray humidifiers (high duty, centrifugal and vertical types); spray curtain or capillary type air washers; atomizers. Send for your free copy today. Oakite Products, Inc., 42 Rector Street, New York 6, N. Y.



SPECIALIZED INDUSTRIAL CLEANING

OAKITE

MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. & Canada

Caldwell Co., W. E.	293	B E
Carpenter Steel Co., Alloy Tube Div.	249	H O
*Carroll & Co., J. E.	282	E
*Carter Traveler Co., Div. of Carter Inc., A. B.	306	T
Celanese Corp. of America, Chemical Div.	243	C
Yarn Div.	68-69	G
Century Electric Co.	10	F
Cities Service Oil Co.	177	M
Clark Equipment Co., Industrial Truck Div.	224	P
Clark Mfg. Co.	184	H
Cleveland Worm & Gear Co., The	79	Q
C-O-Two Fire Equipment Co.	241	B
*Cole Mfg. Co., R. D.	246	B E
*Coleman Co., Inc.	282	E
Colton Chemical Co., The	252	C
Columbia-Geneva Steel Div.	175	O
Columbia-Southern Chem. Corp.	42	C
Commercial Factors Corp.	2 Cover	N
Consolidated Chemical Industries, Inc.	288	C
*Continental-Diamond Fibre Co.	268	P T
*Cook-P & N Machine Co., Inc.	146	E
*Crane Co.	78	H
Crane Mfg. Co.	262	L
*Crompton & Knowles Loom Wks.	13	R
Crucible Steel Co.	171	O
Custom Scientific Instrument Co.	293	K
Cutler-Hammer, Inc.	155	F
Dana Warp Mills	281	G
*Darnell Corp., Ltd.	236	P
*Dary Ring Traveler Co.	272	T
*Davis & Furber Machine Co.	194	E
Dayton Rubber Co., The	48-49	RT
Deutscher, Spinnereimaschinenbau, Ingolstadt	37	T
*Dinsmore Mfg. Co.	279	E
Dodge Mfg. Corp.	84-85	Q
*Dommerich & Co., Inc., L. F.	54	N
*Dow Corning Corp.	251	C
*Draper Corporation	1	RT
*duPont de Nemours & Co., Dyestuff Div.	140	C
Electrochemical Dept.	239	C
Textile Fiber Dept.	193	G
Edroy Products Co.	284	N
Eisenberg Fibers, Inc.	287	G
Engineered Plastics, Inc.	242	T
*Eriez Mfg. Co.	210	T
Falls Yarn Mills	260	G
*Finnell System, Inc.	28	D
Fiske Bros. Refining Co., Lubriplate Div.	276	M
*Foster Machine Co.	52	T
*Fuller Brush Co.	198	B
*Garland Mfg. Co.	183	R
*Gaston County Dyeing Mach. Co.	261	E
Gates Rubber Co.	12	Q
General Chemical Div., Allied Chem. & Dye Corp.	159	C
General Dyestuff Corp.	53	C
*General Electric Co.	30, 40-41, 199	F Q
*Gessner Co., David	277	E
Goodrich Chemical Co., B. F.	204	C
Goodyear Tire & Rubber Co.	9	Q
Gulf Oil Corp.—Gulf Refining Co.	47	M
*Haskell-Dawes Machine Co., Inc.	256	T
*Hayes Industries, Inc.	225	R
*Heim Co.	213	R
Heineman Corp., O., Div. of Aetna Industrial Corp.	289	G
Hermas Machine Co.	262	E
Hinde & Dauch Paper Co.	192	P
Holdsworth Gill Screw Co.	26-27	T
*Howard Bros. Mfg. Co.	38	T
Hunt Loom & Mach. Wks., Inc.	161	R
*Huyck & Sons, F. C.	284	E
Hyatt Bearings Div., General Motors Corp.	229	O Q
Industrial Rayon Corp.	81	G
Industrie-Werke Karlsruhe	305	E
*Ingersoll-Rand	29	H
*Ives Co., L. T.	274	L
Jenkins Bros.	39	H
*Jiffy Textile Marker Co.	290	E L B
*Johnson Corp.	291	H

Keever Starch Co.	207	C
Kessler Trucking Co.	258	P
Kidde & Co., Inc., W.	221	T
*Kold-Hold Mfg. Co.	188	E O
Korfund Co., The	289	L RT
Kuljian Corp., The	208	N
*Lambeth Rope Corp.	281	RT
*Lane & Bros., Inc., W. T.	303	P
*Lestershire Spool & Mfg. Co.	202	R
*Link-Belt Co.	7, 73	Q
*Livermore Corp., H. F.	71	R
*Lockwood Greene Engineers, Inc.	14	N
*Loper Co., Ralph E.	293	N
*Lowell Shuttle Co.	214	R
Lubriplate Div., Fiske Bros. Refining Co.	276	M
Lunkenheimer Co.	87	H
Manhattan Rubber Div.	82	E
Manheim Mfg. & Belting Co.	233	Q
Maple Flooring Mfrs. Assn.	240	B
*Mathieson Chemical Corp.	2	C
*McBride Co., Inc., Ed. J.	220	R
*McCaskie, Inc., Wm.	266	R
*Merrow Machine Co.	265	E
Miller Motor Co.	83	A
*Milton Machine Works, Inc.	250	R
Minneapolis-Honeywell Reg. Co., Industrial Div.	76-77	K
Mobilift Corp.	190	P
Moisture Register Co.	254	K
*Monsanto Chemical Co., Textile Chem. Dept.	64	C
*Nash Co., J. M.	267	D RT
National Aniline Div., Allied Chem. & Dye Corp.	31	C
National Carloading Corp.	281	P
National Ring Traveler Co.	273	T
National Tube Div.	175	O
Naugatuck Chemical Div., U. S. Rubber Co.	167	C
Nopco Chemical Company	57	C
Oakite Products, Inc.	304	C
Oilgear Co., The	65	H Q
*Perkins & Sons Inc., B. F.	60	E
Pfister Chemical Works	283	C
Philadelphia Quartz Co.	258	C
Pick Mfg. Co.	280	E
Pittsburgh Coke & Chem. Co.	35	C
Pittsburgh Plate Glass Co., Fiber Glass Div.	215	G
*Platt Bros. (Sales) Ltd.	22-23	T
Powell Co., Wm.	195	H
Precision Gear & Machine Co.	291	Q
*Prince, Smith & Stells	24-25	T
*Proctor & Schwartz, Inc.	157	E
Product Sales, Inc.	162	T
Raybestos-Manhattan, Inc. Manhattan Rubber Div.	82	E
Reeves Pulley Co.	56	Q
*Reiner Inc., Robt.	16	L R
Reliance Elec. & Eng'g. Co.	46	F
Reynolds Metals Co.	86	B
Richmond Oil, Soap & Chem. Co.	264	C
*Riggs & Lombard, Inc.	211	E
*Rohm & Haas Co.	189	C
Rollway Bearing Co.	235	O Q
Rome Soap Mfg. Co.	281	C
Ryerson & Son Inc., J. T.	246	O
*Sargent's Sons Corp., C. G.	200, 201	E
Scherr Co., Inc., George	292	K
Schlafhorst & Co., W.	11	RT
Schlumberger & Cie.	267	T
Servospeed Div. of Electro Devices, Inc.	226	T
Shore Instrument & Mfg. Co., Inc.	290	K
Sinclair Refining Co.	43	M
*Sipp-Eastwood Corp.	206	T
Sirrine Co., J. E.	3rd Cover	N
*Smith, Drum & Co.	62-63	E
Snap-On Tools Corp.	238	B H
Societe Anonyme, Adolphe Saurer	263	R
Socony-Vacuum Oil Co.	61	C
Solvay Process Div., Allied Chem. & Dye Corp.	191	C
*Sonoco Products Co.	151	T
*Southern Shuttles Div., Steel Heddle Mfg. Co.	270, 271	R
Square D Co.	180	F
*Standard Pressed Steel Co.	288, 292	O

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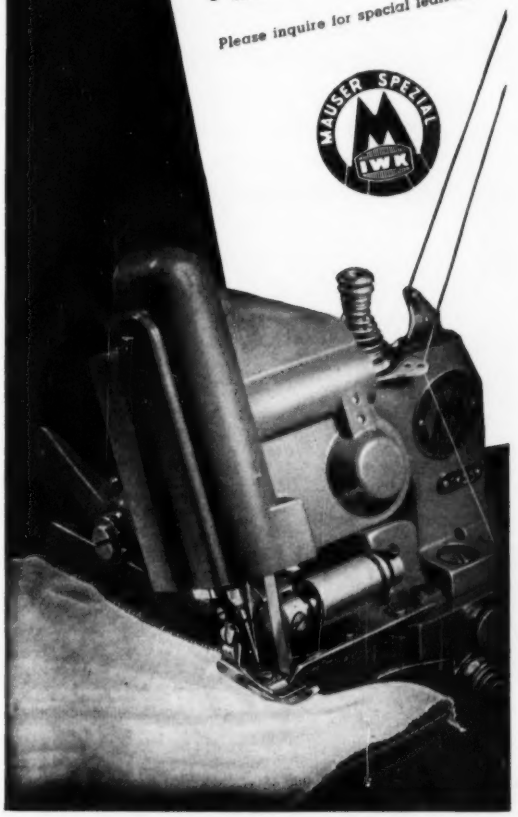

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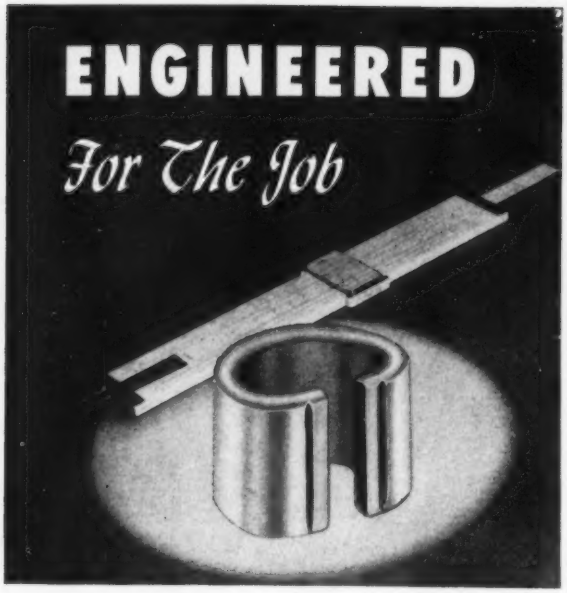

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Stanley Works, The	212		B	P
Steelcote Mfg. Co.	278		B	
*Steel Heddle Mfg. Co.	270, 271			R
Stellite American Corp.	265			T
Sterling Electric Motors	264		F	
*Stewart Iron Works Co., Inc.	260		B	
*Stop-Motion Devices Corp.	277			I
Sun Oil Company	130		C	
Superior Combustion Industries, Inc.	273			Q
*Supreme Knitting Mach. Co., Inc.	227			L
Sylvania Electric Prod. Co.	255		F	
Taylor Instrument Cos.	237			K
Taylor-Stiles & Co.	250			T
Tennant Co., G. H.	228		B	
Tennessee Coal & Iron Div.	175			O
Tennessee Corp.	287		C	
Texas Co., The	4th Cover			M
Texnovo, S.P.A.	286			R
Textile Banking Co.	205			N
*Textile Machine Works	32-33, 88			L
Thomson Industries, Inc.	273			Q
Tide Water Associated Oil Co.	187			M
*Tompkins Bros. Co.	216			L
Torrington Co., The (Needles)	55			L
Torrington Co., The (Bearings)	209			O Q
Tower Iron Works	218			R
Turbo Machine Co.	5			L
Turner & Haws Engineering Co., Inc.	234		A	
*Twin Disc Clutch Co.	222			Q
*U. S. Ring Traveler Co.	260			T
U. S. Rubber Co., Mechanical Goods Div.	217			T
Naugatuck Chem. Div.	167		C	
U. S. Steel Corp.	175			O
U. S. Steel Supply Div.	175			O
*Universal Winding Co.	6, 164			T
Utica Novelty & Mill Spec. Co.	283		F	
*Van Vlaanderen Machine Co.	138		F	
*Veeder-Root, Inc.	74			K
Virginia-Carolina Chemical Corp., Fiber Div.	219		G	
WAK Industries	292			K
*Warner & Swasey Co.	66-67			R
*Wayne Mfg. Co.	262			T
Wehle Conveyor Co.	266			P
Westinghouse Electric Corp., Lamp Div.	245		F	
Micarta Div.	50-51			O
Sturtevant Div.	34		A	
Weston Electrical Inst. Corp.	259			K
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Whitehead Engineering Co.	258			T
*Whitin Machine Wks.	80			T
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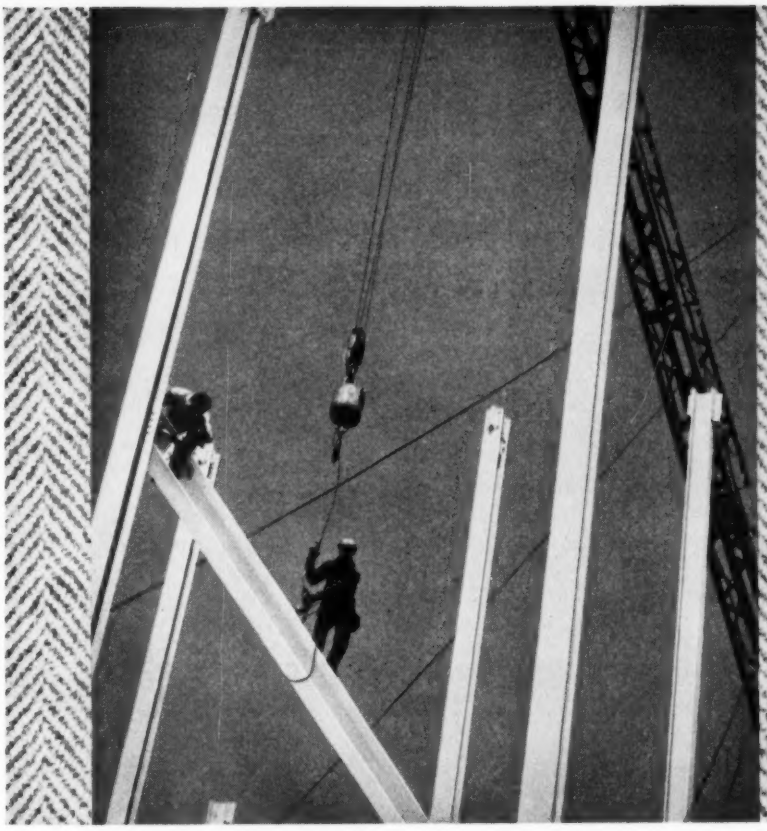

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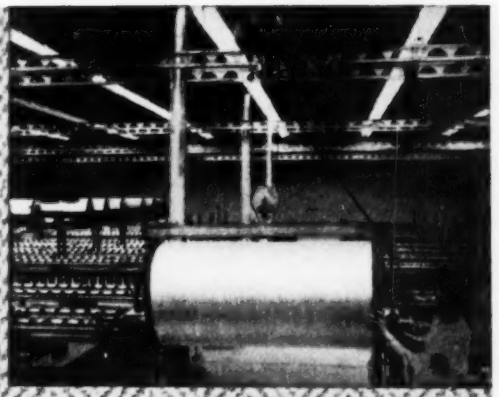

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